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By

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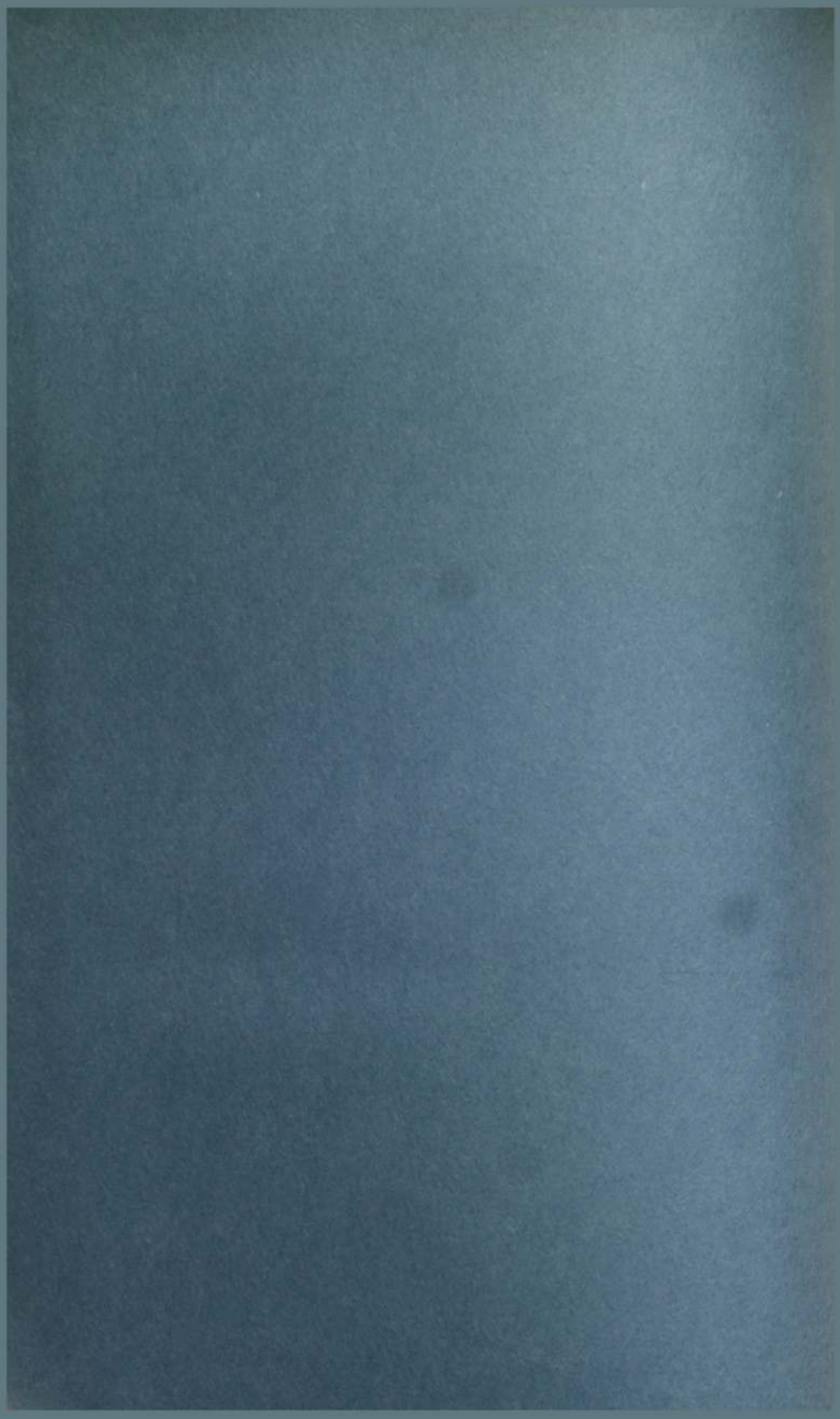


AN ARCHAEOLOGICAL JOURNEY IN WESTERN IRAN

SIR AUREL STEIN

IN Shiraz there ended in May 1934 the third of the journeys which had carried me from the extreme south-east of Iran and up the Gulf coast into Fars, the ancient Persis. It was hence appropriate that the latest and longest of my Persian journeys should start from Shiraz, the modern capital of that ancient Persis to which Iran owes so much of its historical greatness and culture under the Achaemenian and Sasanian dynasties, and from which not unjustly it has taken its classical name in the West. The help kindly accorded by the late Iranian Minister in London, H.E. Mirza Hussein Ala, and by the British Legation at Tehran, had been mainly instrumental in securing the Iranian Government's generous permission for the intended explorations. For the ready sanctioning of my plan and the manifold facilities afforded which rendered its execution possible, I cannot feel too grateful.

My practical preparations after my arrival in Shiraz early in November 1935 were greatly facilitated by the friendly interest shown in them by H.E. Majid Khan Ahi, the enlightened late Governor General of Fars, and by the convenient base provided at the British Consulate through the kind hospitality of Colonel and Mrs. Hoyland.

Already on landing at Bushire I had been joined by M. Bahman Karimi, the able Inspector of Antiquities whom the Ministry of Public Instruction had deputed from Tehran to accompany me on my travels. He showed throughout keen interest in my investigations and proved ever willing to make the needful arrangements with the local authorities. For the topographical work which, as on all my former journeys, I was anxious to combine with archaeological exploration on ground as yet inadequately surveyed, I was once more provided by the Survey of India with a very capable and indefatigable assistant in the person of Surveyor Muhammad Ayub Khan, a Yusufzai Pathan. The results of the plane-table work, carried out on the $\frac{1}{4}$-inch scale and supplemented by regular barometer and clinometer observations, are embodied in the accompanying map.

During our stay at Shiraz I was able to provide our party with suitable transport in the shape of sixteen hardy mules hired from Kazarun. As on my preceding journey in Fars, I had every reason to feel grateful for the powers of endurance displayed by these excellent animals even on the worst tracks over which our journey in the hills took us. It was the same also as regards the care with which they were looked after by their hard-worked owners. It was a boon to feel assured that with such transport weather conditions, however much they affected the ground during the winter rains, could not seriously impede our progress. The use of motor transport on the high roads connecting the main centres of trade and traffic has in recent years greatly reduced employment for mules, and in consequence also the rates of their hire. This was very satisfactory since all expenses on this journey had to be met from my own purse.

The initial portion of my programme was to lead us along the ancient main route connecting Fars with Khuzistan, the Elam of the Bible, or

Susiana as known to the classical world from its famous capital, Susa. I had not to wait long for fulfilment of the hope that we might find ancient remains along this route awaiting exploration. We had moved up from Shiraz only three marches among hills where scattered plantations, now mostly abandoned, attest that production of wine which made Shiraz famous of old, when in the broad elevated plain below the town of Ardakan a small isolated mound attracted attention. A few days' trial excavation disclosed plentiful remains of chalcolithic times in the shape of painted pottery and stone implements. Their evidence showed that this well-watered high ground, close on 7000 feet above the sea, where winter had already set in with bitterly cold winds, had in the fourth-third millennium B.C. known conditions of civilized settled life similar to those prevailing at the same period in several of the lower valleys of Fars previously visited by me.

While the area near Shiraz had suffered much through fighting between the rival factions of Qashqai and Qawam chiefs, the fertile tract of Ardakan had, until the strong regime of His Majesty Riza Shah Pahlavi secured peace and order, been exposed to constant depredations by turbulent Mamasani tribes. There was curious evidence of the disturbed conditions once prevailing to be noted in the small town of Ardakan. The nomadic tribe of the Buyair Ahmad had been specially distinguished for their raiding. To them it had served as the place where they could dispose of the proceeds of their forays carried out on the roads towards Isfahan and Shiraz. There they could also arrange for the supply of their civilized needs in the way of tea, sugar, and the like. The substantial houses of the Ardakan headmen who had acted as receivers for the booty were now occupied by local officials while their owners were duly kept among the many *détenus* at Tehran.

From Ardakan I proceeded westwards to regain the main route leading from Shiraz to the plains of Khuzistan. It had been left by us some 18 miles farther to the south. The track we were following led for about 13 miles across broad barren downs furrowed by deep-cut stream beds. Then it crossed a steep ridge marking the rim of the central Persian plateau by the Bolsoru pass at a height of about 7500 feet. From there we descended very abruptly through dense oak forest into the fairly open head of a valley known lower down as Tang-i-Khas. The topographical indications here gained by our plane-table work on ground not previously surveyed have thrown interesting new light on the operations by which Alexander forced his hard-won passage through the "Persian Gates" on his advance from Susiana and the Uxian hills to Persepolis.

This is not the place to detail all local observations. They conclusively prove that the ancient route, marked by a succession of remains, led, just as the present caravan track does, from the ruined "Bridge of the myrtles" (*Pul-i-murd*) through the defiles of the Tang-i-Gerrau, a lower continuation of the Tang-i-Khas, up the very steep rocky slopes above the left bank of the stream in the latter (Plate 1). Diverging thence to the south-east it reached the pass by which the watershed towards the Ardakan drainage is crossed by the present trade route to Shiraz at an elevation some 400 feet lower than the Bolsoru pass. That Alexander on his march towards the "Persian Gates" had proceeded by this trade route had already been recognized by

Kinneir in his 'Geography of the Persian Empire' early in the last century. But without proper acquaintance with the ground, of which no exact survey was available, it was impossible to follow closely the movements which enabled Alexander under great difficulties to turn Ariobarzanes' Persian force holding the pass and, after destroying it, to open his way unopposed to the capital at Persepolis.

Now the fairly detailed and concordant accounts of Alexander's historians (Arrian, Curtius, Diodorus) tell us that the Macedonians' direct attack, after the enemy had allowed them to advance into the defiles below the pass, was beaten off. They had suffered heavy losses from the great stones rolled down and the missiles discharged upon them from the precipitous slopes above. Alexander, repulsed for the first time in his victorious progress through the Persian empire, was obliged to recall his troops to a camp placed in an open position about 30 stadia, or 3½ miles, from the ground held by the enemy. From the very precarious situation following this initial defeat Alexander extricated his force only with much difficulty. Led by a local guide he made his way during the night with light armed troops by a difficult path up very steep forest-clad slopes away from the approach to the defenders' position. When the rim of the plateau had been gained with a great effort and his exhausted troops had been given some rest, one detachment was sent off direct towards Persepolis over easier ground. Alexander himself, proceeding by a rough path, made a turning movement which brought him before the following dawn upon the Persian outposts. After putting these to flight he "quite unobserved just at dawn, assaulted the camp of Ariobarzanes." At the same time the force under Craterus which had been left behind by Alexander, moved up to attack the enemy holding the pass. Thus hemmed in on both sides the Persians were put to flight with great slaughter.

A look at the inset map prepared from our plane-table survey and a route-sketch along the caravan track made by Professor E. Herzfeld in 1905 shows how closely the operations I have briefly summarized agree with the topographical features observed on our move across the head of the Ardakan plateau and on the subsequent descent into the head of the Tang-i-Khas valley. This descent from the Bolsoru pass led down the slopes of the Paskohak massif covered throughout with dense oak forest. For close on 3 miles it was so steep as to be barely practicable for laden mules. Then, after we had camped for the night of November 27 at an elevation of 6200 feet on a small patch of fairly level ground, two more miles of descent next morning brought us to a large open space occupied by gently sloping fields and known as Mullah Susan.

It is here that we can safely assume Alexander's camp to have stood after the attack along the caravan route to the pass had been beaten back. The track leading to it was clearly seen by us winding up under precipitous rocky slopes. These would make it easy for a force holding the heights to stop any advance towards the pass by the method of defence described in the texts. The distance between the open ground at Mullah Susan and the point where the caravan track enters a narrow defile before attaining the pass corresponds as closely as may be to the 30 stadia or 3½ miles which Curtius records as the distance over which Alexander withdrew when the assault was abandoned.

In the same way the march of some 100 stadia or about 12½ miles, which in Arrian's sober and precise account is mentioned as covered by Alexander's turning movement on "a difficult and rough path," closely agrees with the distance to be traversed from Mullah Susan to the Bolsoru pass and thence across much broken ground to the rear of the pass held by the Persians above Aliabad.

It is equally easy to reconcile with the actual configuration of the ground Curtius' statement that after ascending to the pass across the range Alexander himself turned to the right, *i.e.* to the south-east, in order to take Ariobarzanes in the rear, while a column from his force was left under Philotas and Coenos to proceed over easier ground, obviously across the open plateau of Ardakan, in the direction of Persepolis. From Arrian we learn that it was this column marching towards the plain which reached the Araxes (the Pulvar river) before Alexander, and bridged it in accordance with his instructions. Thus it was made possible for him after his victory at the pass to hasten to Persepolis at full speed and to secure the royal treasure there before it had been plundered by the garrison.

On our way down the picturesque Tang-i-Gerrau we came repeatedly upon traces of an old made road. Where it had crossed the deep stream of Ab-i-Laleh coming from the north-west we could examine the ruin of the ancient bridge known as *Pul-i-Murd*, the "Bridge of myrtles" (Plate 2). Professor Herzfeld, who on his memorable journey of 1905 to Shiraz had followed this road, had rightly recognized the construction of the bridge as dating from Sasanian times. Farther on we were to find quite a succession of ruined bridges proving the care which had been taken in this period, and probably earlier also, to assure the passage of all streams likely to be unfordable at times of flood for caravan traffic and military movements.

From the mouth of the Tang-i-Gerrau, where the tree growth clothing the hill slopes was finally left behind, we entered the wide valley of Fahliun. This naturally fertile and easily irrigated tract must have been of economic importance before it became depopulated in consequence of the tribal feuds and general insecurity prevailing here until quite recent times. From it there diverges to the south-east a much-frequented route, described by early Arab geographers. Passing through the fertile tracts of Shapur and Kazarun it attains Shiraz over easier ground. On this account it was, though longer, preferred during Muhammadan times, and probably earlier also, to the direct route through the "Persian Gates."

There is no doubt about this route being meant where Arrian (*Anabasis*, III, xviii, transl. E. I. Robson) tells us that Alexander after forcing his way into the territory of the Uxian hillmen, "sent off the baggage trains, the Thessalian cavalry, the allies, the mercenaries, and all the other heavier-armed troops of his army with Parmenio to lead them against the Persians by the main road which leads into their country (*i.e.* Persis)."

Close to where the stream from the Tang-i-Gerrau enters the open Fahliun valley and joins the larger one carrying the drainage from the Ardakan plateau and known as the Rud-i-Shashpir, there rises a remarkable table mountain to a height of about 6000 feet. It figures in Muhammadan records and in widespread legendary lore as the almost impregnable stronghold of Qal'a-

safid, the "White Castle." Of Timur it is stated that he besieged and took it on his march from Khuzistan into Fars. That the mountain, imposing in its isolation, was not merely a natural fastness as had been believed, but carried also ancient remains, was proved by the ascent made on November 30 from our camp at Dasht-i-raz village. Guided by Khalil Khan, a Jawi chief, owning a picturesque orchard-girt seat at the west foot of the mountain, we arrived by a steep path just practicable on horseback, at a point fully 3000 feet above the valley from where wall-like cliffs of limestone rise up to the edge of the mountain top. Access to this was gained by clambering in zigzags up narrow rocky ledges to where at an elevation of *circ.* 5700 feet a fortified gatehouse is passed. Its constructive features point distinctly to Sasanian times.

From there a slightly less difficult scramble, along step-like rock ledges and then over steep wooded slopes, brought us to the rim of the plateau which forms the top of the mountain some 300 feet higher up. The plateau, roughly oblong in shape, measures more than 4 miles in circumference. Small eroded nullahs divide it into four gently sloping broad ridges. At the head of one of these nullahs issues a small perennial spring. The presence of water explains how the mountain could serve as a place of refuge defensible for some length of time, and otherwise also for prolonged occupation. Its top is clothed with plentiful vegetation, and along the western ridge remains of vineyards planted at no distant time could be traced. Higher up the same ridge is occupied by the ruins of decayed dwellings stretching on terraced ground for about two-thirds of a mile. Abundance of pottery debris, including many fragments of fine blue glazed ware, was found near the ruins, attesting continued occupation during historical times.

The construction of the larger houses, with walls of stone set in concrete, clearly pointed to Sasanian times. The same was observed in two "gates" closing the heads of precipitous ravines in which good climbers might gain access to the top by difficult paths known to the local hillmen. The natural strength of the fastness and the difficulty of completely blockading its approaches is so great that the traditional fame of Timur's exploit in gaining possession of it is easily understood. At the same time the Qal'a-safid is too far removed from the route leading to the "Persian Gates" to be considered as ever having commanded it.

On our march down the wide valley plain traversed by the Fahliun river I noticed at two points evidence of the importance which this fertile tract, now occupied only by wretched hamlets amidst malaria-breeding rice-fields, must have claimed at early periods. Following up the right bank of the river to where it makes a sharp bend under a precipitous rocky spur I visited on the top of the latter a very interesting but much effaced rock carving in relief. Professor Herzfeld ascribes it to prehistoric Elamite rule in these parts, perhaps about the second millennium B.C. Its position was explained when I found quite close to it the remains, partly rock-cut, of what probably was an ancient watch-station, guarding a narrow artificial path which winds along the cliffs below it. The view commanded by it was very extensive. How large the cultivated area to the north of the river must have once been was shown by miles of terraced slopes covered with the debris of completely

decayed stone-built dwellings. They stretch along the foot of the hill range to the north and east of the mound and hamlet of Tel-espid.

When moving from there to the north-east we came after some 4 miles to a low saddle known as the *Kotal-i-sangar* (the "Pass of the stone wall"). There the old caravan route passes through a defile flanked on both sides by high spurs falling off in precipitous cliffs. The saddle is nearly a mile wide and is closed by a roughly built wall of large stones, in places almost effaced. It runs up on either side to the foot of unscalable rock walls and thus forms a regular *chiusa*. Certain indications pointed to considerable age and suggested that the wall marked a place where the hillmen could conveniently levy dues on caravans passing their territory.

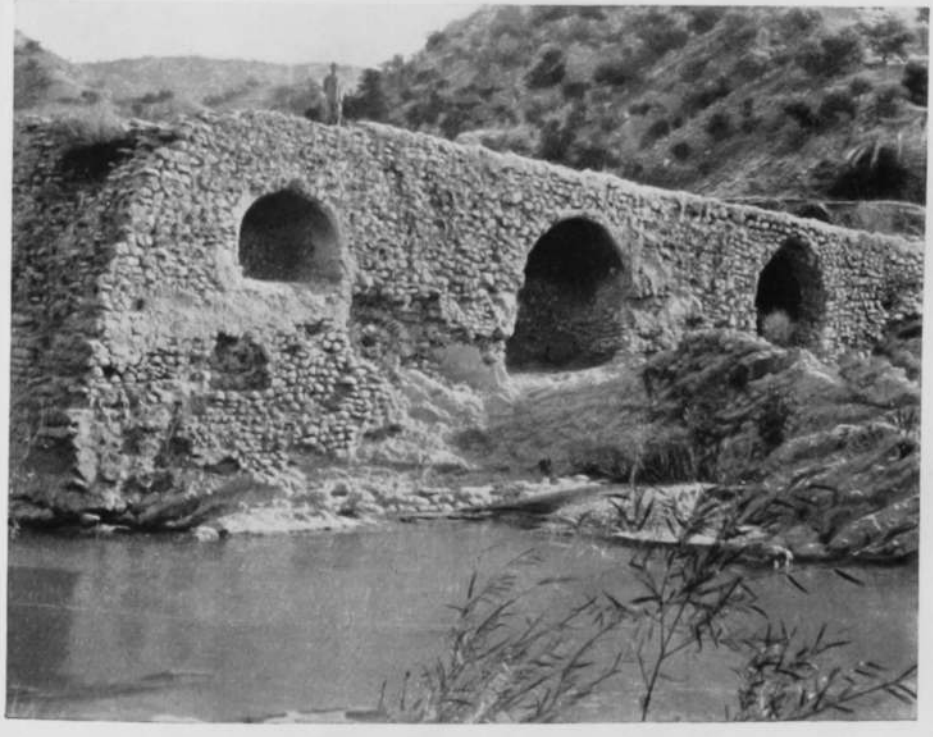
I could not therefore help thinking of the story told by Arrian (*Anabasis*, III, xvii, 2–5) of the defile where the Uxian hillmen waited for Alexander on his march from Susa towards Persis, expecting to be paid "what they usually received from the Persian king whenever he made a progress that way." Their claim was obviously for "tribal allowances," to use the term familiar on the Indian North-West Frontier. There the experience gained in the course of a century has made it appear expedient to those responsible for the main line of communication from Afghan territory into India to pay such allowances to the Afridi tribes holding the Khyber. Alexander had in reply to their demand bidden the Uxian hillmen "to come to the pass; which while they held it, made them feel that the way through into Persis was in their hands, there to receive the accustomed payment from himself also." Alexander however with a part of his army, "during the night marched by another than the obvious road, being guided by the Susians," fell upon the Uxian villages unawares, and then arrived swiftly in the rear of the pass "where the Uxians were likely to oppose him in full force." "Overmastered at the very position in which they had chiefly put their trust," they were forced into precipitous flight with great slaughter.

The absence of detailed indications both in Arrian's text and in the generally concordant but much briefer account of Diodorus makes it impossible to determine the line taken by Alexander in his turning movement through the hills on either side of the defile. But the reference made by Arrian to the quantity of plunder captured in the Uxian villages makes it obvious that the turning movement must have brought Alexander into the Fahliun tract. This is by far the largest area of cultivable ground that can come into consideration along the line of his advance towards the "Persian Gates."

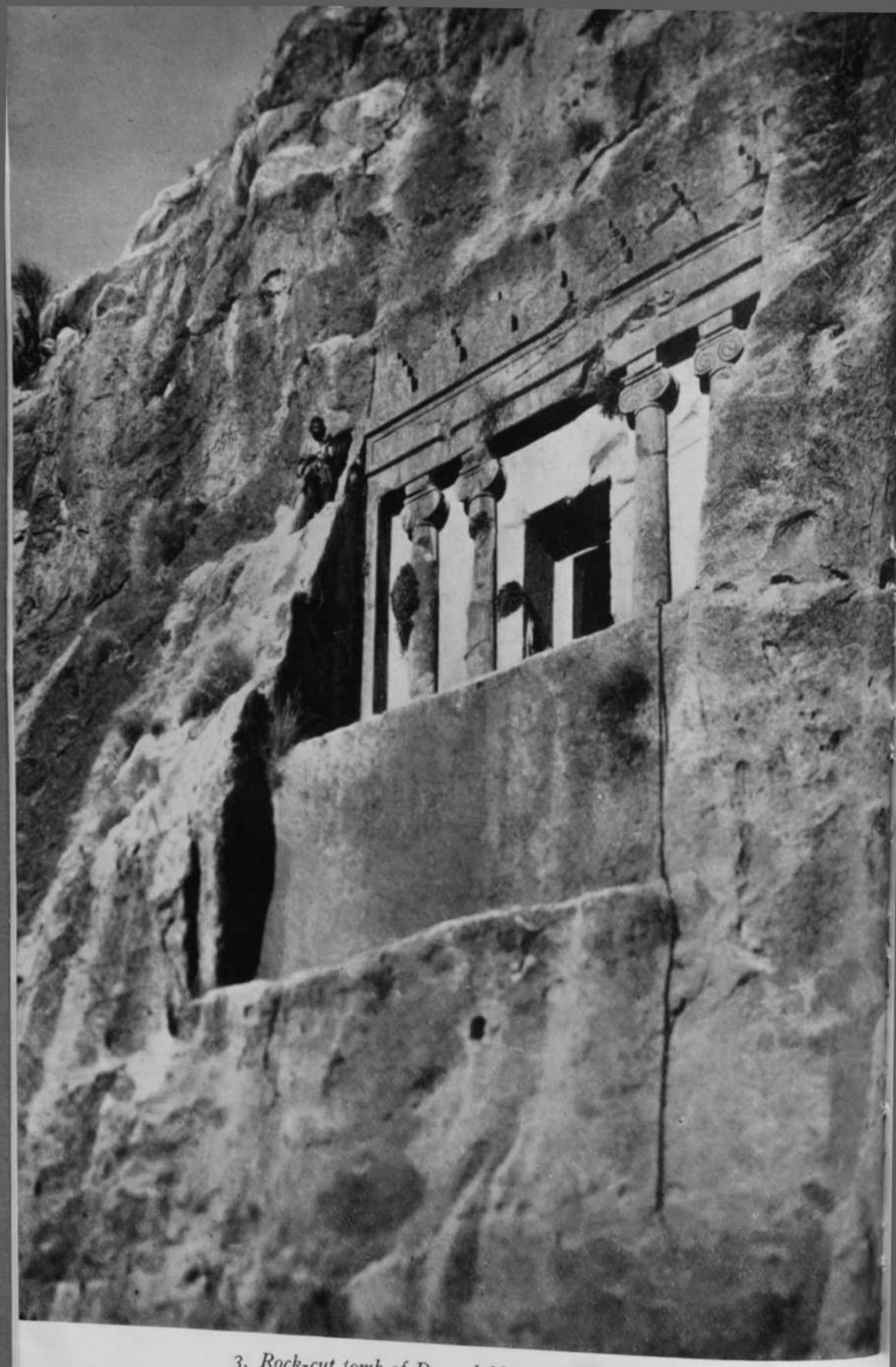
The valley of Deh-i-nau into which the "Pass of the stone wall" took us, proved much smaller but equally well watered. Yet this naturally fertile ground is so sparsely populated at present that sufficient labour could not be readily obtained for trial excavation at a couple of small mounds manifestly prehistoric. Farther down we came upon a fine piece of ancient engineering in a massive barrage, probably Sasanian, built to hold up a small stream for irrigation. The remains of a small ruined watermill met a few hundred feet higher up seemed to date from the same period.

But an earlier and far more imposing monument of antiquity presented itself in a great rock-cut tomb sighted on a high and precipitous mountain-side beyond the torrent bed of Tang-i-shir (Plate 3). From the pairs of double

1. The Tang-i-Khas valley



2. Pul-i-Murd, the Bridge of the Myrtles



3. Rock-cut tomb of Da-u-dukhtar, Deh-i-nau valley

columns of reddish limestone flanking the entrance to the tomb chamber it is known as Da-u-dukhtar, the "Nurse and the princess." The ascent to it proved a very stiff climb of some 500 feet. On reaching a narrow terrace at the foot of the perpendicular rock wall below the tomb I gained a good view of its front. But I realized also that even if I had not lost my toes it would not have been practicable for me to reach this. Fortunately a Kohgalu herdsman whom we had brought along managed to clamber up like a spider over the narrowest fissures and toe-holds. He proved intelligent enough to handle a tape measure we gave him, and thus to secure for us approximate measurements. Professor Herzfeld had seen the tomb before, and the reference he has made to it in his recent Schleich lectures confirms the report that the rectangular chamber within is void of any burial-place or inscription. The most striking architectural features of the façade are the Ionian-looking capitals of the columns; with the abacus and double architrave they seem to suggest Greek influence.

Remains of far greater dimensions and distinct architectural interest revealed themselves next morning on following down the old line of road through the narrow picturesque gorge of Tang-i-Brin. In it the lively stream draining the Deh-i-nau valley breaks through the hill range dividing it from Basht. The modern caravan route crosses the range some distance farther up. This accounts for the two ruined bridges found close to the mouth of the gorge at a short distance from each other not having been noticed in earlier accounts. Their examination provided quite a fascinating task. Several architectural features, such as semicircular arches and the masonry of solid concrete, proved that the upper bridge was the older and a work of Sasanian times. It spanned the stream where it emerges from the gorge, with a width of some 60 yards, by a single bold arch. This must have fallen by the time the bridge lower down was built. But the massive buttressed piers on which this great arch rested still rise in impressive strength, the one on the right bank to a height of some 45 feet. In order to give access to this height and the still greater one of the arch spanning the river eight subsidiary arches had been built along the cliffs of the left bank.

This approach was skilfully utilized later by an extension of fifteen more arches to give access to the lower bridge. This latter bridge dates from early Muhammadan times and was thrown across the river, here about 100 yards wide, by means of two large arches resting on an intermediate pier. The aim of the later builders had been defeated here also by some exceptionally high flood, and the solid mass of cemented masonry from the intermediate pier now lies upheaved in the bed.

More puzzling, if less imposing, were the remains of a large oblong base found on the left bank a short distance above the older bridge. It was faced with carefully cut slabs of great size which had once been secured with metal clamps. This method of construction pointed to the Achaemenian or the immediately succeeding period. The purpose of the isolated structure which this solid base had once carried seemed very puzzling until I observed a block of massive stonework just opposite, high up on the precipitous rock face of the right bank. It suggested that these two structures may have served to anchor some kind of a suspension bridge, older than either of the two bridges. The approach on the right bank is too rocky and narrow to have admitted

any but men on foot or led animals. But even such a bridge, constructed like a *jhula* in Kashmir or the Hindukush, would have sufficed to assure communication whenever the stream in flood was otherwise impassable.

On fording the stream of the Tang-i-Brin we had left Fars behind and entered the province of Khuzistan. The ground in the valleys here became distinctly more arid and cultivation even scarcer than before. Significant proof of these physical conditions having prevailed also in earlier periods was afforded by the ruined cisterns met at varying distances along the old road from here onwards. A couple of marches brought us again to ancient remains at the mouth of a torrent bed known as Tang-i-Maliun, the "Devil's gorge." Among the numerous ruins marking here a fairly large settlement of Sasanian times, there was one of special interest. It was a small but fairly well preserved residence, once probably occupied by a principal landowner. It was an instructive task to prepare a careful plan of the house, with its reception hall, dwelling rooms, court and servants' quarters, all comprised within a compact square capable of defence.

It was the same also with a fortified enclosure some distance off. Its lay-out with a massive square keep at one end of the oblong enclosure, with small bastions defending the curtain walls and a kind of ravelin protecting the gateway curiously recalled one of those *castella* to be seen on the Roman *Limes* in the Syrian desert. Might he who constructed the post have become personally acquainted with some of those border defences by which Rome for centuries succeeded in warding off Persian inroads into its Near-Eastern provinces? Or was its construction carried out by some Roman officer or engineer among the captives made by a Sasanian army? The well, now dry, within the enclosure proved to lie in the line of an old abandoned *qanat* or subterraneous canal. This accounted for the occupation of this now waterless ground.

As we moved along barren foothills dominated by the Khumi massif rising to close on 10,000 feet and capped with snow at the time, we came upon the ruin of a large and well-planned Sasanian residence defended by walls and fosse. Around a central domed hall, now collapsed, vaulted corridors and outside apartments forming concentric squares were disposed in an ingenious fashion. The ruined dwellings high up in the valley of Shaikh Khwaja, to which a trying ascent from the village of Do-gumbadan brought us, proved to date only from the sixteenth to the seventeenth centuries. Then we resumed our march by the old road. After passing in parts through a maze of deeply eroded gypsum hills, where oil had been found, it brought us to the eastern edge of the wide Behbehan basin.

There, above the hamlet of Khairabad, we came again upon a pair of ruined bridges which once spanned the considerable river descending from the valley of Deh-dasht. Of the lower one, dating from Sasanian times, there remained only one large semicircular arch adjoining the massive pier from which the arch spanning the river had sprung. On the bank above there stands a ruined square hall with openings on all four sides with noble semicircular arches. The masonry in the walls which carry what survives of the domed roof consists, as in the arch of the bridge below, of rough stones set in cement and still retaining in places a facing of very hard plaster. The purpose of the structure,

impressive even in its ruined state, could scarcely have been anything else but to serve as a *takht* or royal pavilion from which to watch the river passage.

Far more imposing are the remains of a later bridge farther up (Plate 4), of which three arches on the right bank and two on the left still survive. The central arch to which they formed the approach has completely fallen. It appears to have spanned the river, here flowing in a rock-cut bed about 60 yards wide, with a single vaulting. The heavy buttressing of the pier on the right bank shows the thrust it had to bear. The pointed tops of the surviving arches and the facing of the piers with small cut slabs left no doubt about this upper bridge having been built in early Muhammadan times, when the Sasanian one had fallen into ruin.

The town of Behbehan lies in the centre of a wide plain to which irrigation from underground canals, if restored, might, as in earlier historical times, assure abundant resources. Here we were detained by a succession of rainy days. The intervals were utilized for the examination of a number of small mounds in the vicinity. Definite evidence of prehistoric occupation was found only at one of them. There a trial excavation, short as it was, brought to light a quantity of ceramic ware painted in monochrome with designs closely resembling in type those characteristic of pottery found before at chalcolithic sites of Fars. It sufficed to prove the extension of the same prehistoric civilization as traced on my former journeys through great portions of southern Persia into parts near the head of the Gulf and once included in ancient Elam. Elsewhere surface indications pointed mainly to settlement within historical periods. Our stay at Behbehan proved useful for securing the help of Colonel Zindehdil Khan, the very able and energetic local administrator, for making needful arrangements about escort and guidance in the Kohgalu hills in the north, as yet practically unsurveyed.

The route chosen at our start on Christmas Day allowed me to visit the remains of Arrajan town on the left bank of the Marun river and the ancient bridge reported near it. Of that once important town, occupied in early Muhammadan times and probably before also, nothing could be seen above ground but extensive low heaps of debris. The young green cropping out after the recent rain was charitably covering them up. More interesting it was to survey the ruins of the great bridge which once served the abundant traffic passing from Khuzistan through Arrajan towards central Persia. Arab geographers of the ninth to tenth centuries have left us impressive descriptions of the mighty arch of stone which spanned the river bed, fully 100 yards wide, where it is confined between projecting steep cliffs.

This great arch has completely disappeared now, and of the piers which once bore it, only the lowest portion of the one on the left bank is still standing. But the huge boulders used for a breakwater to protect it against floods and those buttressing the foundations attest the care taken to make this pier equal to the thrust it had to bear. On the right bank, against which the floods set with increased force owing to the sharp bend of the river, the several piers have been almost completely swept away. But the four massive embankments which once bore them have survived with but little injury. What remains of the masonry there and in the piers on the left bank seems to bear out the

statement of one of the Arab geographers assigning the bridge to the time following the Muslim conquest.

The extensive ruins of an "old town" near the village group of Tashan, to which our first march beyond the river brought us on December 28, proved too well preserved to date back farther than the period of the great Safavi dynasty, the sixteenth to seventeenth centuries. The abandonment of the town is accounted for by the disturbed conditions prevailing in the Kohgalu hills until recent years through tribal feuds and banditry. Now order is fortunately assured by the efficient control which the present regime has established over the tribes. Though saved from trouble in this respect we found our moves in these hills trying enough otherwise. Recent rains had made the steep and slippery slopes of the prevailing gypsum formations impracticable for any laden animals except such hardy mules as we had brought from Shiraz. Even they had again and again to be relieved of their loads and the baggage man-handled at the worst points.

The ruined town of Deh-dasht (Plate 6) reached after three tiring marches from Tashan, proved interesting enough even though none of its remains could claim greater antiquity than the Safavi period. The strong rule of that dynasty had assured security for the old trade route which had passed here towards Isfahan, the capital of the period. Deh-dasht had owed its former importance to its convenient position on this route, to the protection afforded by an elevation of some 2700 feet from the heat of the plains, and to the local resources which cultivation in the broad valley near by, now practically uninhabited, had once provided.

From a distance the deserted town looked quite imposing, with its hundreds of stone-built houses crowding closely on and around a rocky hillock. Inside the crumbling town wall many substantial buildings, including large sarais, mosques and comfortable mansions, were ranged along the narrow streets. All wrapt in utter silence, they presented an impressive scene of decay. But my people did not at all like the eerie look of the dead place nor the total absence of creature comforts for men or beasts, and were glad to leave it behind.

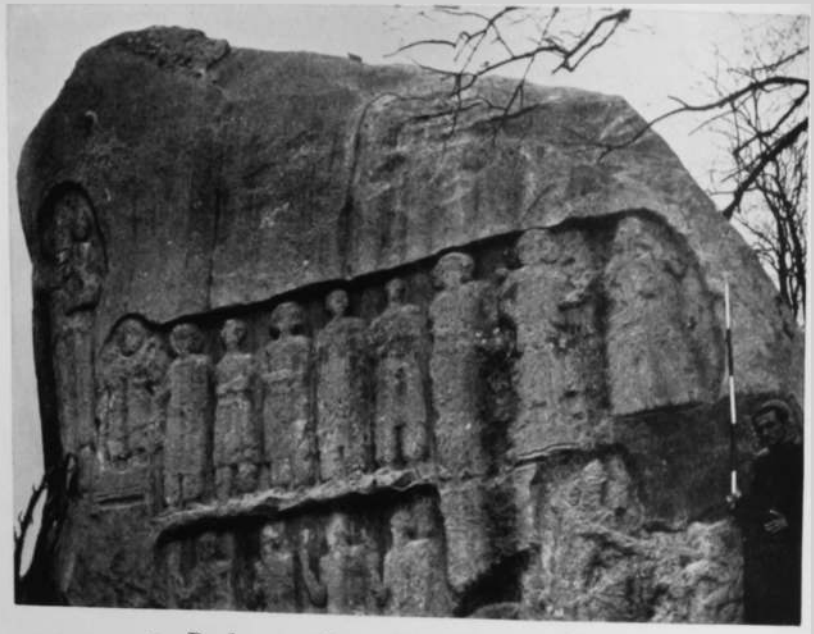
From here we turned to the north-west and after recrossing the Marun river reached Lindeh, the headquarters of the chief of the Taiyibi tribe. Escorted by him and his armed followers we then made our way early in January 1936 across a very trying succession of steep ridges and deep-cut ravines to the border of the mountain tract held by the once very troublesome Bahmai tribe. To reach thence the rock sculptures beyond the Tang-i-Sarvak pass for which I was bound proved a difficult undertaking, for the very narrow well-wooded gorge through which the ascent led was found blocked at many points at its bottom by projecting rocks and fallen limestone boulders. It was only after great exertion that, with the mules dragged up unladen and the baggage carried by our few men over seemingly impossible places, the pass, snow-covered at the time, could be gained at a height of 5300 feet. After a night passed there we descended to the head of the valley on the opposite side. It is called *Tang-i-Sarvak* from its growth of fine cypresses.

The relief sculptures found there on large detached rocks had been first seen nearly a century ago by Baron de Bode on a hurried visit paid from the caravan

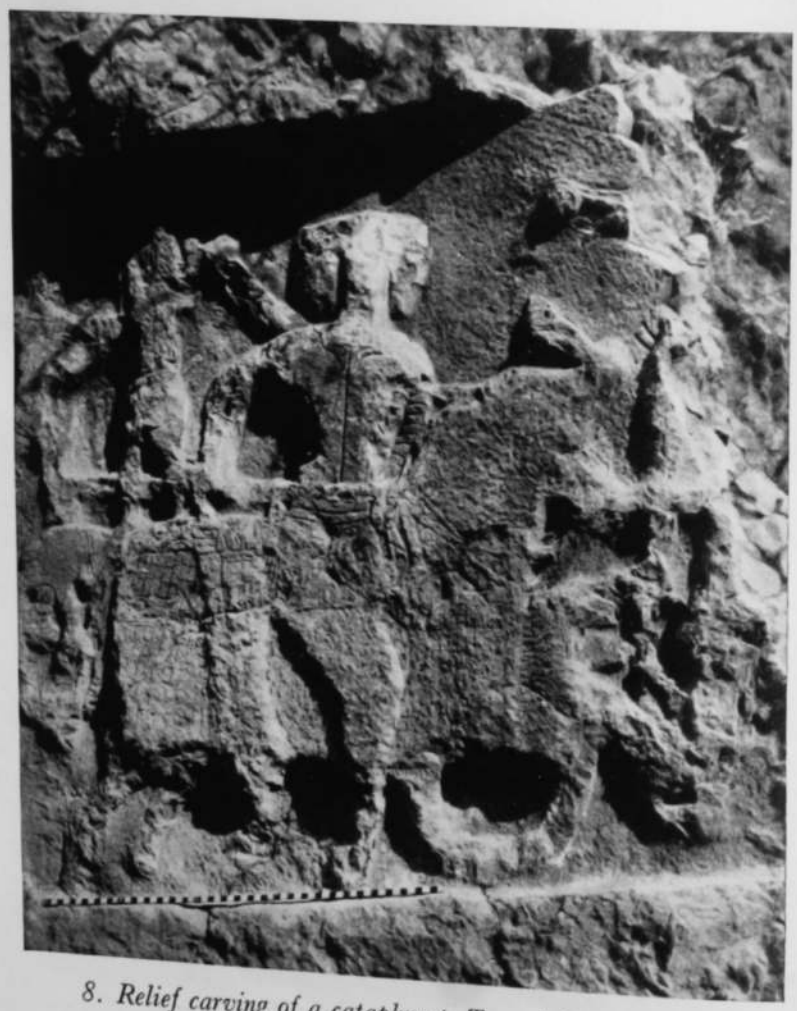
4. Bridge above Khairabad, Behbehan

5. Ruined watch-station, Kohgalu

6. Ruined town of Deh-dasht, Kohgalu



7. Rock-cut relievo, Tang-i-Sarvak valley



8. Relief carving of a cataphract, Tang-i-Sarvak valley

road leading into the Bakhtiari country. They proved far more interesting than expected. The largest of the relievos is cut on one face of a detached dark rock over 20 feet high (Plate 7). It represents in the top register rows of attendants standing by the side of a seated royal personage and below four figures turned in the same direction and with their raised hands apparently pointing upwards to an object of worship. To the right of these is shown a horseman in typical Parthian attire charging a lion standing up on its hind legs. In the bottom register there was seen, after it had been cleared, a large standing figure grasping with the right hand the gorge of a seated lion. The surface of the rock has weathered badly on this side and does not allow all details of the attire of the seated figure and of the attendants to be made out. But the hairdress, the long coats and bulging wide trousers distinctly recall Parthian representations.

This style is quite unmistakable in the colossal figure which occupies the north-western fairly flat corner (Plate 11). It is that of an elaborately dressed personage or Magus pointing with his raised right arm to an altar above, which bears a baetyl or linga-like object adorned with a floating scarf. The scene is obviously intended for religious propaganda. Two inscriptions in Aramaic characters of a proto-Pahlavi type cut below the altar and near the charging horseman also point to the late Parthian period.

The northern face of the rock which partly overhangs and has also suffered much from weathering bears reliefs carved in two registers. The upper one shows a large male figure reclining with bent legs on a couch and holding a wreath or crown in the right hand. The four corners of the couch are borne by what look like birds with outspread wings and feet ending in talons. The two figures seen to the right, seated and holding spears, and three others in the lower register, standing, afford no definite clue for the interpretation of this relief.

Somewhat better preserved and more striking is the relief carving on another detached rock close by. There is seen the figure of a horseman completely clad in mail, as is his steed also, in the act of charging with a mighty lance at an enemy (Plate 8). The figure of the latter is likely to have occupied the rest of the rock face now fallen off. It was easy to recognize there a spirited representation of those cataphracts of the Iranian armies from Parthian times downwards, who for centuries proved formidable foes to Roman and Byzantine forces. Behind and above the mailed knight are shown figures, on a much smaller scale, of an archer rapidly advancing with drawn bow and of a captive following behind.

Among other reliefs found on smaller rocks some distance both above and below may be mentioned one showing a priestly figure with the right arm raised above a fire altar. By its side passes an ancient well-aligned and paved track. It is traceable for about a mile from near the mouth of the gorge. It has no continuation beyond the main group of reliefs. This suggests that its purpose was not to facilitate traffic across the pass but to make the open head of the valley below it conveniently accessible. Could this, with its fine trees, spring and cool air, have served as a kind of "hill station" and summer retreat for the local chief or administrator of the hot plain below?

Owing to bad weather with rain and bitterly cold winds it took several days

to secure photographs of all the rock carvings and estampages of the inscriptions. Then we turned north towards the Bakhtiari hills. After a succession of marches across hills for the most part lacking permanent habitations we reached ground which just a century ago had seen that great scholar, explorer, and diplomat, Sir Henry Rawlinson, pass on a memorable expedition. On the way to Qal'a-i-tul, once a seat of great Bakhtiari chiefs, I was able on a much broken limestone plateau to examine an interesting ruin known as *Gach-darwazeh*, the "Gypsum gate" (Plate 5). Instead of being, as former accounts had it, a mere toll gate, it was easily recognized as a watch-station, probably of Parthian times, exactly of the same type as the *castella* of a kind of *Limes* I had traced twenty years ago on desert ground south of Sistan.

At Manjanik, the first village beyond, there were to be visited extensive ruins of a large settlement dating from Sasanian times and crowded with decayed vaulted dwellings. Then at the foot of the great mound which bears the rapidly decaying castle of the Qal'a-i-tul, I found proof of the very early occupation of the site in the shape of a large relief-decorated limestone block accidentally brought to light recently. The style of the carefully modelled sacrificial scene represented on it indicates the extension of Elamite domination into this hill tract about the second millennium B.C.

Conspicuous evidence of Elamite civilization was to be seen in the Malamir basin farther north. The rock sculptures and cuneiform inscriptions found in the large grottoes of Shikaft-i-Salman and elsewhere had been first examined by Sir Henry Layard and made later the subject of expert study. But apart from visits to these remains there awaited me at Malamir an important recent discovery. At the house of the capable military administrator of the district I found to my surprise and delight a carefully cast bronze statue of a male figure, 6 feet 4 inches in height, wearing on the head a diadem-like band, and suspended from a waist-belt, sword and dagger (Plate 10). While the dress of the figure was Iranian, as also the arrangement of the hair, the excellently modelled head showed unmistakably the influence of Hellenistic art. The features of the face curiously recalled those represented in certain Graeco-Buddhist sculptures of Gandhara. From the same find came fragments of smaller bronze figures and two marble heads. One wears the royal diadem and the other, badly damaged, is that of a Hellenistic type of Aphrodite, like that found by me in 1934 at Fasa. All these sculptural remains could clearly be recognized as dating from Parthian times, the least-known period in the history of Iranian art.

I was naturally anxious to examine the place of this remarkable find. It was reported to have been made some six months before in the valley of Shami. But before setting out for it to the north-west we succeeded, by a short trial excavation at a small mound, in recovering a quantity of interesting painted pottery. This definitely proves that the well-watered Malamir basin holds remains of a chalcolithic settlement. From our route to Shami I diverged to the Karun river valley for a rapid visit to Susan, where Rawlinson had heard of ancient remains. They proved to consist only of extensive but shapeless stone heaps stretching on terraces for a mile above the right river bank. The importance which this small but naturally fertile tract had once enjoyed is attested by the paved bridle path, obviously ancient and skilfully engineered

12. Crossing the Saimareh river

13. Ruined bridge over the Saimareh below Hulailan

14. Ruined bridge over the Kashgan river

along steep spurs falling off to the river, and by the remains of a Sasanian bridge once spanning the river where it is confined to a cliff-bound bed some 50 yards wide.

Retracing from Susan part of our route and then crossing a low pass to the north, we reached Shami by January 27. There in the steep but fairly open valley known by that name we were shown the spot where the bronzes had been discovered. It lay at an elevation of about 3600 feet on one of the terraces which stretch down from a rugged high mountain on the west and offer some ground for cultivation. A short while ago an order had gone forth here to the scattered camps of still semi-nomadic Bakhtiaris that all claiming arable land should settle down near it in permanent habitations. So one of the Shami people had started to build himself a dwelling with the rough stones plentifully lying about on that terrace. In digging down for a foundation wall he had struck the bronze statue seen at Malamir at a depth of a couple of feet. After a day's digging done in the presence of the district officer had brought to light the fragments of sculptures also removed to Malamir, the place of the find had been left undisturbed under administrative orders.

A week of steady excavation now allowed me systematically to clear the whole of the low mound from the south-western corner of which the sculptural remains had been recovered. It proved to mark the site of a quadrangular temple, measuring about 76 by 40 feet, which had been destroyed by fire and sacked. Subsequently its walls had been levelled to the ground to provide space for some later structure. But the foundations of the walls could still be traced, and in the centre of the quadrangle an altar built with burnt bricks and approached over a brick pavement had survived.

There was only too clear evidence that this site, dating from Parthian times, had after its first destruction been greatly disturbed by quarrying operations for metal and other useful materials. This was proved by the disturbed position of six massive stone bases which had once carried statues. On some of the bases there were sunk sockets for the feet of more than one figure. Among the numerous broken pieces from bronze images, all cast and clearly showing in their modelling the influence of Hellenistic art, there were several which had belonged to statues over life-size.

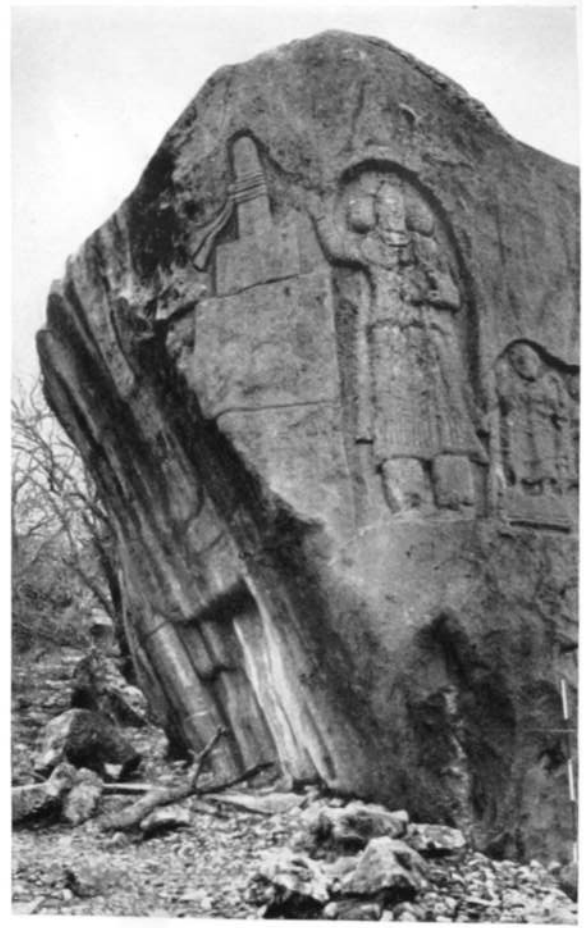
The most striking of these remains are pieces of a fine male head, obviously smashed with violence. The two halves of a well-executed mask can fortunately be fitted together and show a face in a distinctly naturalistic treatment of Hellenistic style (Plate 9). A third piece found close by shows the back perhaps belonging to the same head. The diadem tied over the locks indicates that a royal personage is represented. Worship of kings deified is well attested among Alexander's successors in the Near East, and expert examination of the head, when the portions have been properly joined up and cleaned, may yet lead to the identification of the king to whom the image was dedicated.

Among the fragments recovered from other bronze statues I may mention a carefully modelled colossal hand which, by the pose of the fingers and wrist, suggests that of a divinity holding a sceptre or spear. Besides other sculptural fragments, we recovered a miniature altar of marble, delicately carved; pieces worked in *repoussé* of two ornamental candelabras of copper, perhaps for burning incense; the elegantly designed bronze foot of a chair or table

(Scale ½)

9. *Mask from head of bronze statue from Shami*

10. *Bronze statue from Shami*



11. *Rock-cut relievo, Tang-i-Sarvak valley*

representing the foot of a lion; and a sheathed steel dagger. A small copper coin from the mint of some Greek town in Mesopotamia afforded a welcome indication of the approximate date when the shrine was still visited.

There remains the puzzling question as to how a locality so restricted in space and resources as this outlying valley of Shami is, could afford a temple so amply provided with objects of Hellenistic-Iranian worship. It is hard to assume that objects of such size and weight as a colossal bronze statue could have been brought from any great distance to a place surrounded by rugged mountains. On the other hand, if it was cast here, what highly developed cultural and economic conditions it presupposes for such a locality. A thorough exploration of certain ruins just traceable below the surface of cultivated terraces lower down might perhaps yet help to answer such questions. But even without this there is reason to feel grateful for the light thrown by the finds of Shami on a fascinating but as yet very scantily documented phase of art in Iran.

Early in February I found it necessary to get into contact with the authorities at Ahwaz, the headquarters of the Khuzistan province. The journey there was greatly facilitated by the effective help and hospitable attention accorded by the management and staff of the Anglo-Iranian Oil Company. A two days' halt at the great oilfields of Maidan-i-Naftun left me deeply impressed with all that British industrial enterprise and engineering skill had by systematic planning and organization succeeded in creating in the face of exceptional difficulties both physical and otherwise.

Short as my stay at Maidan-i-Naftun was it could be utilized also for visits to two sites of archaeological interest. One of them was the huge platform, built with large slabs of freestone on a rocky hillock and known as the "Mosque of Solomon." It suggested at first a praying platform as used for Muhammadan worship, and a tomb of later construction at one end attests the continued sanctity of the site. But as jets of fire fed by gas escaping from the underlying oil-bearing strata were always known in the immediate neighbourhood it is highly probably that the site served Zoroastrian worship in connection with pilgrimages to the sacred fire, "self-crested" as the traditional term in Kashmir would have it. This accounts for the abundance of Parthian and Sasanian coins picked up after rainfall on the hillock.

Hospitably received by Mr. A. E. Watkinson, the British Consul, I was able at Ahwaz to secure the ready help of the experienced and enlightened General Mo'ini, commanding the forces in Khuzistan and Luristan, for a fresh escort and other needful arrangements to facilitate our prolonged journey ahead.

From Dizful, or rather Salahabad, the present rail head in its vicinity, our journey through the western and northern portion of Luristan was to start. On the way I paid a brief visit to the great site of ancient Susa. Ever since the days of MM. Dieulefoy and de Morgan extensive and systematic excavations had been carried on there on behalf of the Louvre under the patronage of the French Government. For fully half a century they have yielded a rich harvest of important discoveries. The hospitable welcome and expert guidance of M. le comte de Mecquenem, the present head of the Mission de Suse, made this visit both enjoyable and very instructive.

The route chosen after my caravan had rejoined me at Dizful took me first to Pa-i-pul. There the remains of an ancient bridge and barrage, much broken and showing later repairs, are to be seen thrown across the wide bed of the Karkheh river which drains most of Luristan and the Kermanshah province. Above it lie the heads of old canals which once had served to irrigate a portion of northern Susiana, now mostly abandoned to scrubby desert. The Karkheh, quite a considerable river, proved unfordable at this season and no skin rafts could be obtained anywhere along it. So instead of crossing the river we struck north, and in the course of three marches leading across difficult and previously unsurveyed ground through a maze of deeply eroded winding gorges, reached the point where the Karkheh turns round the south-eastern extremity of the high and rugged Kabir-koh range. The long winding valley of the river, known as Saimareh from here onwards, was to see us for close on two months.

From above the confluence with the mountain stream of the Ab-i-Zal we had to follow the left bank for several marches. The river has here cut its tortuous bed in such deep and extremely narrow ravines as to be practically invisible from the modern motor road engineered along it towards Khurram-abad. But turning off from this for a short distance I was able to visit the point known as Pul-i-tang, where the rock-lined bed is so narrow that a jump right across it from ledge to ledge could be risked by lithe-limbed Lurs from bravado, as Sir Henry Rawlinson witnessed.

This newly built motor road is the only route practicable for mechanized transport between Tehran and the head of the Persian Gulf, and the heavy traffic met along it showed its importance. But it was of interest also because, in conjunction with effective military operations of recent years, it has been mainly instrumental in reducing to order the congeries of turbulent tribes ever given to plundering or at feud with each other in this northern or Pish-i-koh portion of Luristan. Among the measures adopted by the present strong regime to assure peace and security for traffic has been the forcible settlement of the nomadic Lurs in fixed habitations. The exceedingly primitive look of these as seen along the new high road and elsewhere illustrated the novelty of the change thus enforced.

That this change, so beneficent on the whole, must involve serious hardships for a considerable proportion of the *quondam* nomadic tribal population can scarcely be doubted; for many of those who were accustomed to seek warmth in the lower valleys or in the plains of Khuzistan during the winter months and to migrate with their flocks to high ground in the mountains for the rest of the year, are now forced to face climatic extremes in one form or another for which they have not been prepared by the experience of former generations.

Yet just where we diverged from the modern high road in the small open plain of Jaidar there was striking evidence to be seen that this region had in earlier times also known trade and traffic presupposing more settled conditions of life. Where the Kashgan river, an important tributary of the Saimareh, emerges from a succession of difficult defiles it is spanned by the remains of a bridge imposing enough even in its state of complete ruin (Plate 14). The single arch and pier on the left bank still rise to close on 70 feet. But of the

intermediate pier which appears to have carried the two arches stretching across the actual river bed only huge compacted masses of cemented masonry emerge from the tossing water. On the right bank, inaccessible at the time owing to the flooded state of the river, the piers once carrying the arches of approach conveyed an impression both of their solid construction and of the force of the floods which had undermined and completely overturned some of them.

This noble structure, known as *Pul-i-dukhtar* or the "Bridge of the princess," probably dates from early Muhammadan times. Confirmation of this approximate dating is afforded by the remnant, scanty as it is, of a much earlier bridge to be seen a short distance lower down on the right bank. There the facing of what is left of a pier immediately by the river bank is formed by much larger blocks of stone set in uniform courses and once tied together by metal clamps. This is a method of construction manifestly pre-Sasanian.

From Jaidar two short marches to the south across a belt of a low gypsum hillocks and intervening ravines brought us down to where the valley of the Saimareh widens out into a more open stretch of alluvial ground at the foot of the Kabir-koh. A medieval bridge repeatedly repaired spanned the river where it contracts to about 25 yards between limestone rocks a short distance below its junction with the Kashgan. Its central arch has fallen since Rawlinson crossed it in 1836. Lower down there could be seen scanty remains of piers of two earlier bridges, and with materials quarried from them probably much of the bridge still standing in its ruins had been built.

Our crossing had to be effected by means of a single small raft made up of a dozen goat skins with a "deck" of reed bundles (Plate 12). As the raft could not carry more than three mule trunks besides a single passenger at a time, the ferrying of our whole camp, including the escort, took nearly a whole day. The Saimareh, unfordable during winter and spring, had to be crossed seven times more in this way. The ups and downs of civilization are aptly illustrated by the fact that Luristan nowadays does not know the art of the potter. Its people are content to drink from skin bags, and the same bags when inflated had to be used for crossing the river. Only on one occasion was it possible to collect a number of bags sufficient for more than a single frail raft.

After crossing the Saimareh to the right bank we moved up the gradually widening alluvial valley bottom along the foot of the rugged Kabir-koh. Cultivation of this naturally fertile ground is facilitated by the ample supply of water for irrigation brought down by small streams from the range. The denser population in historical times of this tract, known to early Arab geographers by the name of Mihrijan or Saimara, is attested at several places by structural remains of small towns. At the mouth of a picturesque side valley the site of the chief place is marked by the extensive ruins of Dara-shahr. The town was much reduced after a terrible earthquake in A.D. 871, but is known to have been occupied down to the twelfth century. Yet some of the less decayed ruins suggested that their structural features had not essentially changed from those of Sasanian times.

At two conspicuous mounds rising above the alluvial riverine plain short trial excavations brought to light definite evidence of prolonged prehistoric

occupation, in the shape of painted pottery of chalcolithic type and engraved stone seals. But easier and far more profitable was the exploration of such remains on the narrow crest of a clay ridge which rises among eroded plateau tongues to a height of some 120 feet above the patches of flat ground between them. The spot is known as *Kazagaran*, the "potters' place." The convex slope of the ridge proved to be littered on its bare surface with ancient pot-sherds. Among them were numerous fragments bearing neatly executed monochrome designs, familiar to me from previous explorations in southern Persia. They had all been washed down from the debris layers of a small chalcolithic settlement extending for about a hundred yards along the top of the ridge and gradually eroded. The very steep slope on the concave side of the ridge facilitated the removal of the earth excavated, and thus allowed us to clear the ground quickly down to the original level. The excavation yielded a great quantity of painted ware with interesting designs including animal figures, all manifestly of the same chalcolithic period, besides engraved button seals, terracotta figurines, stone implements, etc. Below the stratum marking occupation there came to light a number of large pots containing bone fragments from fractional burials, as well as some funerary furniture.

A day's halt on the left bank of the river was enforced by regard for the Persian New Year, March 21. This allowed me to examine closely the remains of a ruined bridge, known as *Pul-i-ab-burdeh*, the "Bridge broken by the water," and presenting a quasi-geographical interest. To my surprise I found that the twelve piers of the bridge, which together with the arches between them, all fallen, extend over a total distance of some 270 yards, are now separated by fully one-third of a mile from the river, which sweeps past in a huge bend under high cliffs of clay to the south. The piers, all much broken, have their bases and buttresses almost completely covered by alluvium. It was obvious that before the river had changed its course and left the bridge high and dry, this must have been exposed for a long time to the force of heavy floods.

Judging from certain structural features the bridge seemed to date from Sasanian times; but there was nothing to indicate when its destruction had started. The change of the river bed is likely to have taken place a considerable time after this. It was all the more curious to observe that the left bank of the river, as shown by careful levelling, now lies fully 40 feet lower than the ground above which the piers of the present bridge rise. The difference between these levels helps to convey some idea of the heavy alluvium which the Saimareh carries down when in flood. To this process continued over a much earlier geological period is obviously due the formation of the high plateau of reddish clay which extends here all along the right bank of the river and faces the beds of limestone or gypsum on the left.

The present position of the ruined bridge acquires a certain chronological interest from a notice to be found in the great geographical compilation of Yaqut (*circ.* A.D. 1200). This mentions a "wonderful and peculiar bridge between Saimara and Tarhan" and ascribes to it a length half the length of a famous bridge at Khanaqin. As the latter counted twenty-four arches, just twice as many as are still counted at the Pul-i-ab-burdeh, and as Tarhan is the name of the tract immediately to the north of this portion of the Saimareh

valley, it is certain that Yaqut's notice refers to the ruined bridge just described. If it was still used in his time for crossing the river, as the quotation from his text accessible to me in Professor Schwarz's 'Iran im Mittelalter' seems to imply, we are supplied here with a useful gauge of the time taken by the two-fold process which gradually filled up the old bed with deposits of alluvium and then forced the river to seek a new one by cutting its winding course into the high clay cliffs which face the plateau of the valley trough to the south. Remains of a small ruined stronghold, situated on the top of a detached gypsum ridge above the left river bank some distance higher up proved to date from Sasanian times. They too afforded interesting evidence as to the change which the bed of the river has since undergone.

During the last week or so the weather down by the Saimareh had been growing distinctly warmer. So I felt glad when I could turn from it northward. There in the open Rumishkan valley, the south-eastern portion of the Tarhan tract, M. de Morgan had already at the close of the last century noted some mounds with painted pottery dating from early chalcolithic times. From a rapid visit which Dr. Schmidt of the Chicago University Archaeological Institute had paid me at Shiraz when on his way by aeroplane from Rumishkan to Persepolis, I knew that his party had been carrying on excavations at the former place for some months and with good results. A two days' extensive survey of the whole ground showed that the exploration of the two small mounds which had been the scene of these systematic labours was still far from being completed, and that there were others, too, of larger size awaiting investigation.

Respect was due on our part for our American confrères' claim, and precluded excavation on this ground. But the inspection of its surface remains sufficed to bring out a fact of distinct antiquarian and geographical interest. Evidence of prehistoric occupation was noted at both ends of the long Rumishkan valley. Yet nowhere does this hold running water on its fertile surface, and cultivation is carried on only with the help of the winter rainfall. These conditions differ in a significant way from my observations in other parts of southern Iran as regards settled occupation in prehistoric times. There evidence of this is confined solely to where surface water is available for irrigation of cultivable ground. It may hence be safely concluded that in prehistoric times the annual rainfall in Luristan must have been larger, just as it now is, than in the regions farther to the east.

In the much more extensive valley of Tarhan proper, into which we next moved across a comparatively low range of limestone hills to the north-west, no evidence of pre-historic occupation was traced. This negative result is all the more curious as two small streams descending from the higher range to the north provide irrigation for some portion of the cultivated area. On the slopes of several low mounds numerous cairn-marked graves attracted attention. Almost all proved to have been opened in recent years, showing the extent to which the search for "Luristan bronzes" on behalf of the antique dealers of Kermanshah had been carried. Of any finds made the local Lurs professed to be ignorant. Of the methods followed by those engaged in the search we were to learn significant details as our further tour brought us nearer to the ground where this destructive exploitation had started.

But before this I was anxious to regain the Saimareh in the Rudbar tract to the south-west. It had remained so far unsurveyed. Both above and below it the river has cut its way for a considerable distance through winding gorges quite impassable even on foot during the greater part of the year. The ruins of the "town of Rudbar" of which Rawlinson had heard just a hundred years ago proved insignificant. But when, after crossing the Saimareh again to the right bank, I proceeded up the side valley of the "stream of Shirwan" it was of interest to compare the present condition of this amply watered and naturally fertile tract with the glowing picture presented of it in the accounts of early Arab travellers and geographers. They knew it by the ancient name of *Masabadan*. The fresh green of the fields was refreshing to the eyes and even more the long-missed view of trees growing here and there in clumps on the slopes. They were mostly small oak trees of considerable age which had somehow escaped the omnivorous goats and the equally destructive nomadic Lurs. But only a few mulberry trees survived to recall the fine orchards described in those early accounts.

The decay and ruin which had overtaken this ground favoured by nature was brought out clearly by the contrast between the reed huts and mud hovels of the recently settled hamlets and the ruins of the "town of Sirwan" as the old Arab writers call it. They stretch for close on a mile along the slope of a steep spur up to where at the head of a narrow valley a fine stream issues from springs. From the accumulation of debris there emerge the openings of row upon row of vaulted rooms and passages, all that remains exposed of houses massively built in tiers, with walls of rough stones and hard mortar. The shape of the vaults pointed distinctly to Sasanian or early Arab construction.

The ruin of a large but completely collapsed structure in the centre was undoubtedly what had been pointed out to Rawlinson as the tomb of King Anushirwan and an object of fanciful legends. A great cutting had been laboriously carried deep down into the consolidated mass of hard debris by a party from Kermanshah digging for "treasure" under a concession from Tehran. This made it possible to determine that the plan of this considerable building probably comprised a central domed hall within concentric squares of apartments and passages. It thus corresponded closely to that of the ruined Sasanian mansion surveyed by us at Chahar-deh on the way to Do-gumbadan.

On this ground, which with the rest of the Saimareh valley lower down is reckoned as part of the *garm-sir* or hot region, the heat of the day had already made itself distinctly felt. All the more I appreciated the cool air of the well-wooded ranges rising at points to more than 6000 feet across which our route farther north led. They form part of the *yailaks* or summer grazing grounds to which Lur tribal sections were accustomed to move with their flocks and cattle in the spring, to remain there till the early autumn. Now all the Lurs have had to give up their "black tents" which served as movable homes and to settle down in clusters of mud hovels built near their fields. That these far from hygienic abodes become by the end of the cold weather uninhabitable for a time owing to insects and vermin is a minor drawback, noticed again and again.

On our way to Hulailan it became possible to map the picturesque tortuous gorges previously unsurveyed in which the river has cut its passage through

successive ranges. Evidence of the traffic once linking Tarhan with the great valleys towards Kermanshah was afforded by the ruin of a bold bridge spanning the river below Hulailan (Plate 13). This fertile tract on both sides of the river farther up had been for years one of the hunting grounds for those "Luristan bronzes" which Lur tribesmen used to supply to antique dealers at Kermanshah. Subsequently clever forgers helped also to flood the market for collectors and museums in the West.

Close study of the many fine genuine specimens had led competent antiquaries such as Monsieur A. Godard, the Director of the Service Archéologique d'Iran, to conclude that these bronzes were all derived from the funerary furniture of burials which probably belonged to a population closely related to the Kossite invaders of Babylonia. But in the absence of direct observation as regards the circumstances of these finds, no definite evidence as regards their chronology was available.

Examination of two extensive burial grounds in Hulailan sufficed to show how thoroughly these Lur searchers had rifled all graves likely to hold bronzes. Experience had shown them that such were to be looked for only where large slabs of stone had been carefully placed over the grave cavities (Plate 17). Of such graves they soon learned to make sure by probing the covering soil, nowhere deep, with skewers. The traditional Lur love of plunder added to the zest excited by the high prices paid for more elaborate bronze pieces. Ceramic ware holding funerary deposits, or anything else not marketable dug up from the graves, was destroyed or left behind.

Close examination of the broken pottery found near such rifled graves showed that these graves were approximately coeval with the burials which a systematic trial excavation carried out by us at the large mound of Kazabad near the western end of Hulailan cultivation brought to light. Here, on the slope of ground bearing remains of permanent occupation towards the close of the Bronze Age, there were found complete bodies stretched out or in a crouching position, as well as fractional burials from bodies previously exposed to birds and beasts of prey. The large pots containing the latter corresponded in type to the ceramic ware found near the rifled graves. Among the objects we recovered near the complete bodies there were iron bangles, anklets, needle, and knife, besides miscellaneous articles in bronze such as pins, figurines, and cups. Judging from these finds it seemed difficult to ascribe these Hulailan burials and the Luristan bronzes plundered from the approximately coeval graves to a period much earlier than the beginning of the first millennium B.C.

Spring had advanced with us ever since we entered Luristan. Decking with beautiful flowers the short-lived verdure of the valleys it provided a constant feast for the eyes. Now that we turned north-eastwards to higher ground *primavera* could still accompany us. Two delightful marches along a range clad with plentiful oak forest at elevations between 5000 and 6000 feet brought us to the wide trough-like valley of Koh-i-dasht. Owing to its central position Koh-i-dasht had served as a favourite base for a succession of Lur chiefs who, helped by tribal feuds and intrigues, used at times to dominate Pish-i-koh or the northern portion of Luristan. The last of them, Nazar 'Ali Khan, had rivalled in power the Wali of Pusht-i-koh in the south and repeatedly

15. Chigha-pahan mound, Koh-i-dasht

16. Tang-i-Gaushumar gorge, Kashgan river

17. Luristan grave at Chigha-barinda, Tarhan

18. Early Muhammadan bridge at Samaq, over Kashgan river

19. Rock-cut wall above spring, Harsin

fought him. No wonder that Koh-i-dasht had suffered much from the exactions of its tribal chiefs and in spite of its wide expanse of arable ground had become sadly depopulated. Nazar 'Ali's son, 'Ali Muhammad Khan, had about eight years before headed the last serious rising in Luristan. He had held a force of regular troops sent against him at bay for a month, at a hill pointed out to me on the eastern edge of Koh-i-dasht, before he made his submission to become a state prisoner at Tehran.

We found Aman-ullah Khan, a cousin whose father had been murdered by the old chief, now installed as local administrator, but with duly limited powers. The useful local information he willingly supplied enabled me to examine on two long reconnaissance rides all old sites within the wide basin drained by the Madiun-rud. Among them was an extensive area where a multitude of graves was seen scattered around an enclosure marked by roughly built and much decayed stone walls. All the graves proved to have been thoroughly burrowed into for bronzes. The plentiful debris of large pots found near the graves showed the same types of decoration as observed at the graveyards of Hulailan.

To the east of the deep-cut bed in which the Madiun-rud gathers its waters from springs fed by subterraneous drainage there rises a mound measuring fully a mile in circumference and justly known as *Chigha-pahan*, "the big mound" (Plate 15). The greatest portion of it was found to be covered with luxuriant crops of wheat and barley, proof of the fertility of the soil produced by deposits in the course of long-continued human occupation. But at the western extremity, where the slope was too steep for tillage, it was easy to pick up on the surface fragments of early painted pottery and worked flints. The trial excavation which kept us hard at work here for four days yielded a considerable quantity of early chalcolithic pottery, including both painted and superior plain ware resembling terracotta in fineness of texture. Apart from a great variety of neatly executed geometrical patterns, interesting fragments with animal designs closely recalling those found by me at chalcolithic sites in Fars were recovered. Associated with these ceramic remains were a variety of miscellaneous small objects in bronze, bone, and stone.

To an observation of distinct geographical interest only the briefest reference can be made here. A careful survey of the mound showed that it occupies the angle between two fairly broad beds now completely dry. That these beds had at one time held running water could have been only conjectured from what the ground itself indicated. Reliable local information showed that these beds had carried a good deal of water from springs higher up in the valley until some twelve years ago, when these springs completely dried up. The change was ascribed to an earthquake which Koh-i-dasht had experienced about the same time. This, on the other hand, is held to have accounted for a notable increase in the volume of the springs some 3 miles away to the west which are now the main feeders of the Madiun-rud.

For the concluding portion of the season's work in Luristan the high-lying tracts of Alishtar and Delfan in the north had suggested themselves. The five marches which took us to Alishtar lay mainly up the narrow picturesque valley of the Kashgan river, and the first of them brought us to the imposing remains of a ruined bridge which once served traffic across it

(Plate 18). The two wide arches spanning the actual river bed had fallen, but the very massive pier between them still rose high above the flood. Of the nine arches on the right bank which served to give access to them, six could still be accurately measured. They proved to be 62 feet in height. The total length of the piers and arches measured on the right bank was not less than about 215 yards.

The interest presented by the structural features of the bridge, such as the shape of the arches, the stone facing of the piers, the layers of concrete within, etc., is much increased by an exactly dated inscription. It is engraved in fine Kufic characters on a large slab which we found lying on the ground near the end of the bridge on the right bank. According to the translation kindly supplied to me by Professor J. H. Kramers of Leiden, it records that the building of the bridge was ordered by Amir Abu'l-Najm Badr, a well-known Kurdish chief, in the year 389 (A.D. 999) and finished in 399 (A.D. 1008/9). Close comparison of the architectural details will help towards an approximate dating of other early bridges such as those mentioned at Jaidar, Brin, and Khairabad.

Farther up, where the river has cut its way in tortuous gorges through a main range, the track brought us to places where the mules even unladen could be taken only with difficulty up ledges of precipitous cliffs. At a point known as Tang-i-Gaushumar progress is possible only in the rock-bound bed of the river confined to about 30 yards between high wall-like ridges of limestone (Plate 16). But for an ancient causeway built for some distance along the foot of the cliffs the passage would be completely closed by the river during the greater part of the year. Though very massively constructed with large blocks of stone set in concrete the causeway has in places been nearly washed away.

Once beyond these gorges, progress became easy. On crossing a broad saddle the wide plateau of Alishtar stretching at elevations well above 5000 feet lay before us within a semicircle of mountains still bearing much snow. Apart from the fort of Mir 'Ali Khan, the last local chief of the Delfan tribes, which now serves as administrative headquarters for this fertile tract, Alishtar had until recent years seen only tribal summer camps from the side of Delfan. It is abundantly watered and now presented a wide expanse of verdant fields, sown with wheat or poppies for opium, and studded with newly built small hamlets. In a number of places these occupy the top of ancient mounds or have their dwellings partly dug into the slopes.

At Girairan, the largest of them, we found these modern quarters built below a mound measuring more than a mile in circumference, and rising on one side to fully 50 feet. Judging from its size and the abundant surface finds of ancient potsherds it appeared to mark the principal settlement of Alishtar during prehistoric times. But there was evidence of its having also been occupied intermittently down to the later Muhammadan period. Trial excavations in two trenches which plentiful and willing labour made possible, in spite of repeated downpours, yielded interesting painted pottery remains with geometrical and animal designs pointing to late chalcolithic times, besides small objects in bronze and stone. A complete burial was found intact, comprising a varied assortment of vessels to hold funerary food deposits as well

as objects of daily use such as a bronze knife and cup. Occupation of the highest portion of the mound in medieval times was proved by pieces of fine glazed ware found there.

From Alishtar we made our way north-westwards along the foot of the high range which divides Luristan from Nihavand and Kangavar, well-known districts of ancient Media. The open valleys of Khava and Khavari, stretching at elevations between 6000 and 7000 feet, had, like the rest of this northern portion of Pish-i-koh, remained previously unsurveyed. There a number of old mounds could be traced. The ceramic and other remains brought to light by short trial excavations at two of them proved that on this elevated ground, too, settled life had existed since about the same early period as at Girairan. At a mound rising where the drainage of those valleys descends into the defile of Badavar a number of burial deposits yielded interesting relics. Among them were engraved cylinder seals used as part of a necklace and betokening Mesopotamian influence, and large bronze rings. These latter, far too heavy for wear, were probably meant to serve as currency.

Our subsequent passage westwards lay through some of the high valleys of Delfan. The burial sites there traced had not escaped the attention of those who for years had eagerly scoured these parts for "Luristan bronzes." The fact of their being situated far away from cultivable ground pointed to those who had deposited their dead there having followed a semi-nomadic life, just as the tribes now claiming possession of Delfan did until quite recently. There is good reason to believe that these valleys, admirably adapted for grazing, were included in the region which served as the breeding ground for the Nysaean horses of the Achaemenian dynasty. Alexander is said to have visited them on his way from Opis to Media.

Our journey had now brought us to where the extreme north-western part of Luristan adjoins Harsin, one of the old settled tracts of the Kermanshah province. Before entering it the opportunity was used to test the stratification of a small but high mound rising above the fine spring and newly built hamlet of Telyab. A short trial trench confirmed the conclusion drawn from surface finds, such as Seleucidian copper coins, that occupation had continued here from late chalcolithic well into historical times. Incidentally there was found here a curious *cache* of a complete set of iron ploughing implements on a level distinctly pre-Muhammadan.

After fully three months of travel in parts which the disturbed conditions of many centuries have left bare of all amenities, it was delightful to come to the small town of Harsin ensconced among luxuriant orchards and groves of old plane trees. The life-giving water of the canals irrigating these is derived from a single magnificent spring gushing forth under high limestone cliffs at the foot of a bare hill range. A wide portion of the rock wall had been cut and smoothed down as if for a large relievo sculpture or inscription; but the work was never completed (Plate 19).

Kermanshah was reached on June 3. Here I was detained by an accumulation of clerical work for twelve days, spent under the hospitable roof of the British Consul, Mr. Charles R. Gault, before I could move into Persian Kurdistan. In its higher valleys I hoped to continue field work during the the summer months. Travelling by car and lorry on the well-made motor

road, we arrived at Senneh, the capital of the province previously known as Ardelan, on June 16. We found a pleasant camping place in the garden of Khusrawabad, an old mansion belonging to a once important local family.

Unforeseen difficulties over our proposed movements within the province were fortunately overcome through the kind interest taken by the Governor, H.E. Mirza Shahab-ud-dauleh, in my scientific aims. His effective help made it possible in the end to secure the needful gendarmerie escort for at least a portion of my programme. So after a fortnight's delay I set out by July 2 for my immediate goal, the caves of Karafto.

My attention had first been called to this interesting site by Dr. W. Tarn. The mention of a Herakles in a Greek inscription imperfectly copied there in 1816 by Sir Ker Porter had suggested to that eminent scholar the possibility of the caves being somehow connected with a shrine of Herakles to which Tacitus refers in his account of the campaign of the pretender Mihirdates, supported by the Romans against the Parthians (*Annals*, xii, 13), and which so far had not been satisfactorily located. The passage mentions Mount Sanbulos as the place where Gotarzes, the Arsacid king, while awaiting the attack, was seeking divine oracles, in particular from Herakles. Three marches, mainly by the high road, brought us to Diwandarra, where our escort was suitably strengthened by some Kurdish men-at-arms. Then we turned off to the north-east and after three more marches over airy plateaux at heights close on 7000 feet reached the caves.

Partly natural and partly carved by the hand of man, they are now accessible only with difficulty by climbing up the face of a precipitous rock wall with which a great ridge of limestone breaks off towards a lonely valley (Plate 20). A careful survey made of the caves in the course of three days showed that apart from a high natural cavern, partially lit from a long gallery opening wide on the vertical face of the cliffs, there are a series of large apartments and passages cut through the rock and disposed in three stories. Above the entrance to the highest flight of rooms, airy and well lit, which would have well served as a comfortable place of residence, I found the Greek inscription rather carelessly engraved as Sir Ker Porter had seen it (Plate 21). Estampages taken of it have definitely confirmed the reading of it conjecturally proposed before by Professor A. Wilhelm. The well-known formula which the inscription contains and couples with the name of Herakles leaves no doubt about his being the divinity to which the locality was considered sacred.

Now the passage of Tacitus above mentioned relates a curious local legend attaching to the shrine at which Herakles was worshipped on Mount Sanbulos. According to this the god was believed to hunt on horseback at night and to be provided for this purpose by the priests at stated times with saddled horses which carried arrows in quivers ready for his use. Then when the horses with empty quivers had returned to the shrine in the morning, the victims of the god's nocturnal hunting would be collected by the priests on searching the woods. In the light of this legend it is easy to recognize the significance of a sgraffito rudely cut over part of the inscription and representing a horseman. Together with similar sgraffiti found on the smoke-begrimed rock walls of the room behind the entrance, it affords clear proof that the Herakles

mentioned in the inscription is the divine horseman of whom the legend told.

I need not discuss here the question which particular Iranian divinity, probably Verethraghna, it was whom Greek-speaking visitors to the shrine identified with Herakles. That the inscription which mentions the god by this name is older than the time of the Roman campaign is made certain by the palaeographic character of the script, which points to the late fourth or early third century B.C. It is equally obvious that the great natural cavern, with its dim light and the several mysterious rifts opening at its back far into the mountain, would have admirably suited a sanctuary to be visited for divine oracles.

The description of those cavities in Sir Ker Porter's account was found generally correct, though tinged by a somewhat romantic disposition easily stirred by such a place. To me they recalled again and again the grottoes of the Sybil I had seen near Cumae. Only great sanctity enjoyed by the site through ages could account for the immense labour which the cutting of all the halls, passages, etc., must have involved. In order to ascertain the cult for which the deep natural cavities may have served perhaps since prehistoric times, it would be necessary systematically to clear the heavy accumulation of fine detritus, droppings of bats, etc., covering their floors, as well as to provide adequate lighting. Such protracted labour was precluded for me. But there was some compensation to be found in the evidence which subsequent topographical observation offered for the location of Mount Sanbulos at Karafto. The journey which took us thence westwards to the town of Sakiz lay along a regular caravan track forming the continuation of the most direct and convenient route which, leading through Iraqi Kurdistan and Sardasht, connects Arbil with the great plateaux of Zinjan and Hamadan in the centre of Media. We know that the campaign recorded by Tacitus started from Adiabene, the territory of which Mosul, corresponding to Nineveh, and Arbil, the ancient Arbela, have remained the chief centres since early times to this day.

The three marches which brought us down to Sakiz led through easy and well-cultivated valleys such as still see a fair amount of traffic and would have favoured invasion from the side of the Assyrian plain and across the upper course of the Little Zab. But though the intelligent officers in charge of the garrison at Sakiz gave us a very kindly welcome, I found access to Baneh and Sardasht in the tracts nearer to the border still barred. So I proceeded northward to Sauj-bulagh, the headquarters of a district included in the province of Urumia, now renamed Rizayeh. This comprises the tracts to the south and west of Lake Urumia.

Sauj-bulagh was the northernmost area included in my sanctioned programme, and it was my hope that here in the higher valleys towards the main Zagros range marking the Perso-'Iraq border we might find during August both comparative coolness and ancient sites to survey. On the Maidan pass by which on the last day of July we crossed into Paswa, the main valley of the tract known as Lajistan, we enjoyed at an elevation of about 6800 feet refreshing Alpine air. We little suspected at the time that the brisk shower which, unexpected at this season, added to this comforting coolness, meant a

cloudburst lower down. It destroyed a portion of Sauj-bulagh town with heavy loss of life, and would have swept away our camp where it had stood in the morning.

The pleasant open valleys of Lahijan are overlooked in the distance by peaks rising to close on 11,000 feet, still bearing snow at the time. They were once held by a leading clan of the Mukri Kurds. They proved to contain quite a number of small mounds where potsherds and worked flints picked up on the surface indicated early occupation. But owing to the ravages this fertile ground had suffered during the war through alternating invasions of Turks and Russians, it had become so badly depopulated that while harvesting was in progress it proved impossible to secure adequate labour for trial excavations.

The great mound of Paswa-qal'a, over 70 feet in height, on which the much-damaged fort of Karan Agha, the present chief of the Mukri tribe, stands, showed how densely this tract must have been inhabited down to historical times. This could be concluded also from examination of the remains of the early Muhammadan period found at the ruined hill fastness of Kitkan. This occupies a small rock-girt plateau, difficult of access, on the top of a conspicuous peak dominating the valley. As shown by the Russian mapping, which in these parts has been very careful, the rock pinnacle crowning the site rises to a height of close on 8000 feet. It offers a magnificent view all round, as far as the great expanse of Lake Urumia.

From Paswa a two-days' march carried us across a fairly low watershed into the wide and abundantly watered valley known as Ushnu or Ushnuviyeh in Kurdish, from its pleasantly situated little town. Here a large mound occupied on one side by the small hamlet of Dinkha had its northern flank cut into by erosion from the river skirting its foot (Plate 22). The steep bank thus exposed to a height of 32 feet above the river offered convenient scope for testing by trial excavation the layers of debris composing it. A week's digging carried out with an adequate number of sturdy and fairly intelligent Kurds was rewarded by ample finds. The ceramics included both painted ware with monochrome designs, mainly geometric, and in the upper layers a considerable proportion of well-made plain red and black pottery, often finely burnished and of a type not met with in Fars and Luristan.

Several intact burials with ample funerary furniture, found at depths varying from 17 to 23 feet below the top edge of the mound, proved to belong to the bronze age. Significantly enough there were represented among them three different burial customs. In a carefully built tomb covered with huge unhewn slabs of stone the complete but badly decayed body of a man was found in a seated position, along with a large collection of small jars and cups as well as bronze objects (Plate 23). The total absence of stone implements pointed to occupation not having started here much before the second millennium B.C.

Before leaving the Ushnu tract in the first week of September I was able to test the conclusions reached at Dinkha by a profitable excavation carried out at a small but conspicuous mound known as Gird-i-Hasan 'Ali. It rises not far from the point where the Gadar river draining Ushnu passes through a defile into the large plain of Solduz south of the Urumia lake. Here too

20. Rock face of ridge containing the Karafto caves

21. Greek inscription in the Karafto caves

22. Excavation proceeding on the flank of the mound at Dinkha

23. Bronze age tomb in the Dinkha mound

plenty of good plain pottery, black and red, was met with. But as the trial trench reached deeper strata, painted ware with neatly executed monochrome designs became increasingly frequent. The designs included bold representations of horned sheep as well as trees, highly stylized, all familiar from chalcolithic sites of Fars and farther east. The abundance throughout of worked stones, including fine obsidian blades, was striking; and a well-made bronze adze found at a depth of 15 feet left no doubt about the mound having been formed mainly by debris accumulating during prolonged occupation in chalcolithic times.

The district of Solduz to which we next turned eastwards was to mark the northernmost limit of the ground covered on my journey. It comprises a wide fertile plain watered by the Gadar river between the hill range of Lahijan in the south and the southern shores of the great salt lake of Urumia. The rich alluvial soil of the district is capable of supporting a considerable population, and a number of fairly large villages showed us that the Turki-speaking tribe of Kara-papak settled here since the beginning of the nineteenth century was well capable of developing the agricultural resources of the tract.

But there was on all sides only too much evidence of the ruin, resulting in famine and depopulation, which at first a short-lived Turkish invasion and then the much longer and equally destructive Russian occupation had wrought in Solduz. Thus at Naghadeh, the administrative headquarters of the district, which we visited first, we found the majority of the dwellings clustering round a great mound, pre-historic in origin, abandoned and in ruins. Of the extensive orchards once surrounding the place nothing was left, their trees having all been cut down for firewood. The construction of a light railway, which the Russians had begun to lay down from the lake and for which the earth work done could still be seen towards Lahijan, would not have afforded compensation for the destruction here entailed by the world war.

At most of the old mounds traced in Solduz in the course of reconnaissance rides the cover of vegetation, due to more ample moisture, rendered it difficult to diagnose the ages of the debris deposits from surface finds. Fortunately definite guidance was provided at the largest of the mounds by chance discoveries previously made there. It lies close to the considerable village of Hasanlu, some 7 miles to the north-east of Naghadeh and about the same distance from the lake shore, rising to a height of some 70 feet at one point and measuring fully a mile in circumference at its foot. On terrace-like ground beyond this villagers had come upon large pottery vessels, and these finds had led to burrowings by professional seekers of antiques.

After we had moved our camp to the site, a deep trial trench was cut down the slope of the mound where it faces the terrace. The strata disclosed proved to be composed of the debris of dwellings with plentiful and varied remains of a period when utensils of copper and bronze had completely superseded stone implements and when iron had only just come into use. Of particular interest were complete pottery vessels of varied shapes found in small kilns. Among them prevailed a highly burnished black or red ware with a very fine smooth surface.

The method for producing this fine surface was demonstrated by an assortment of hard pebbles which had been used as burnishers. These were

found lying on a small palette-like trough ready for use by the potter's hand. Interesting, too, as a relic from a metal worker's shop was a large jar holding dozens of roughly cast bronze rods which may have served as ingots. There, too, were found broken stone moulds for producing such ingots and broad chisel-like implements. A special interest attaches to a piece of hard-baked clay which evidently had served as a sealing round a stopper of wood since perished. It bears impressions from a cylinder seal which has been recognized on expert examination at the British Museum as of Mesopotamian workmanship and approximately of the fifteenth century B.C.

After the trial trench had been dug down to a depth sufficient to settle the character of the debris layers, a week more of our stay was devoted to the examination of the terrace where burials were to be looked for. Here the digging of two long trenches was soon rewarded by a succession of interesting grave finds. From a depth of some 6 feet downwards to close to where the natural soil was struck bodies were discovered buried in varying positions, but always provided with well-preserved funerary furniture. This comprised sets of vessels of varied shapes and skilful make, meant to hold food and drink for the use of the dead in another life. Of special interest in design and careful execution are large jars with curious elongated spouts, obviously intended to hold water. A closely similar shape is known among the Luristan bronzes.

The fabric of well-levigated clay, black, dark grey or red-slipped, clearly shows that all these ceramics were made for ordinary household use and not meant merely for funerary purposes. In most cases the surface is carefully burnished. Painted ware is but rarely represented and shows geometric designs in red and black where not confined to simple annular lines in monochrome. It seems doubtful whether this by the side of the prevalent plain but highly finished pottery could be considered a survival of the far more artistic ceramic technique of chalcolithic times, say, two thousand years earlier.

Apart from small children's remains placed in large pots, the bodies were found either laid out or in a crouching position. There was a certain uniformity in the character of the funerary furniture, though the number of vessels varied. This was still more the case as regards personal ornaments and belongings buried with the dead. They were frequent with the bodies of women, particularly in the shape of bronze rings, bracelets, pins, etc.

The richest deposit of this kind came to light in a grave some 12 feet below the surface. There the neck of a fairly tall woman was adorned with several necklaces made up of numerous beads of stone, copper, shell, frit, glass, and also a few of gold foil. A broad pendant-like plaque on the breast showed neat bands of copper beads mounted on a thin sheet of iron. But even heavier than this must have been an assortment more than a foot long of thin copper tubes, three tubes in each case being hinged together by means of small copper beads. When worn by the lady hanging over her breast this must have produced a pleasant musical tinkling whenever she moved.

The burial customs and deposits observed throughout at different depths had been so uniform in general character that even long-continued excavation over this wide area did not seem likely to disclose essential facts presenting novelty. So when the careful packing of all objects, including half a dozen

well-preserved skulls deserving of expert anthropological examination, had been done, I felt free to leave the site with a fair conscience. It had been an interesting but also a trying time. The heat of the days was scarcely abated by the violent gales, due to aspiration, which were blowing with rare interruptions from forenoon till evening. To keep one's eyes open was at times very difficult.

But this discomfort could not blind me to the interest of the wide view which the high position of our camp allowed me to enjoy in the early mornings. Apart from the high chain of the Zagros still within view above Ushnu there was a kind of fascination exercised by the scenery towards the great lake.

Before turning southward again I took the opportunity of extending my inspection of some neighbouring small mounds to the shore of that inland salt sea. As I looked across its wide utterly lifeless expanse from the barren coast, it was curious to feel that here at the northernmost limit of my journey I had been brought as it were within reach of Tabriz and the Caucasian regions.

The cold nights which set in suddenly with the end of summer served as a warning that it was time to regain Kermanshah and prepare for the proposed campaign in the autumn. As we passed back towards Sauj-bulagh I took occasion to visit from Qum-qal'a village the rock-cut cave tomb of Fakhrakah, first described by Sir Henry Rawlinson, and the extensive debris area of Shahr-i-Viran. The latter marks a ruined site of medieval times; but at some scattered mounds traced a short distance beyond it, known as Seh-gird, potsherds picked up on the surface clearly indicated prehistoric occupation. Owing to harvesting operations and some local obstruction it proved impossible to obtain labour for excavation without undue delay.

By September 27 we reached Sauj-bulagh and thence motor transport allowed us to regain Kermanshah after three days' travel. There the hospitable welcome accorded at the British Consulate by Mr. and Mrs. Vaughan Russell not merely afforded a very refreshing rest but helped me greatly to face the long and unforeseen delay which occurred over the arrangements needed for my journey onward to the Pusht-i-koh and along its foot to Khuzistan. Preparations for the expected visit of His Majesty the Shah on a tour of inspection fully absorbed the attention of all military and civil authorities of the province.

However, after His Majesty's tour through the province had safely terminated it became possible to secure the needful gendarmerie escort and to set out by October 21 on the proposed long journey. I was anxious, before turning to the Pusht-i-koh region, to gain some acquaintance with the tracts to the north of the ancient high road leading towards the Mesopotamian plains. So after reaching the wide valley of Mahidasht I spent the following week in making rapid surveys of the very numerous mounds scattered over considerable distances in that fertile tract. A number of them furnished evidence of prehistoric occupation.

Then turning to the south-west into the hills of Guran associated with Sir Henry Rawlinson's early political service in Persia, we were able in the neighbourhood of Gahwareh to examine high ground which so far had remained unmapped. Signs of incipient illness had affected my movements since leaving Kermanshah, and by the time we arrived at the interesting old town of Karind, situated on the ancient high road, and mentioned already

by that name in the Parthian itinerary of Isidorus of Charax, I was obliged to make a short halt. There telegraphic instructions issued from Tehran brought news that permission for travel in the Pusht-i-koh, named in my originally sanctioned programme as the final portion of my journey, had been withdrawn.

In consequence of this unforeseen obstacle I returned to Kermanshah by the high road, planning instead to continue work northward in the direction of Hamadan. A succession of marches allowed me there to visit the well-known remains of Behistun and Kangavar before illness obliged me to seek rest under the roof of the Hamadan Vice-Consulate, and to abandon any further attempt at field work. By December 7 I was able to start on my homeward journey, travelling by motor to Ahwaz and thence by steamer to Mohammerah. There I recovered fresh strength under the roof of Captain and Mrs. Bazalgette at the British Vice-Consulate and arranged for the shipping to London of the collection of antiquities which, under the generously granted permission of the Iranian Government, was to be temporarily deposited and examined at the British Museum. Finally by the third week of December I bade farewell to my faithful travel companions and took my leave from Iran. The happy memories of the years spent on its ancient soil will not be dimmed by whatever chances of fresh work may yet await me elsewhere.

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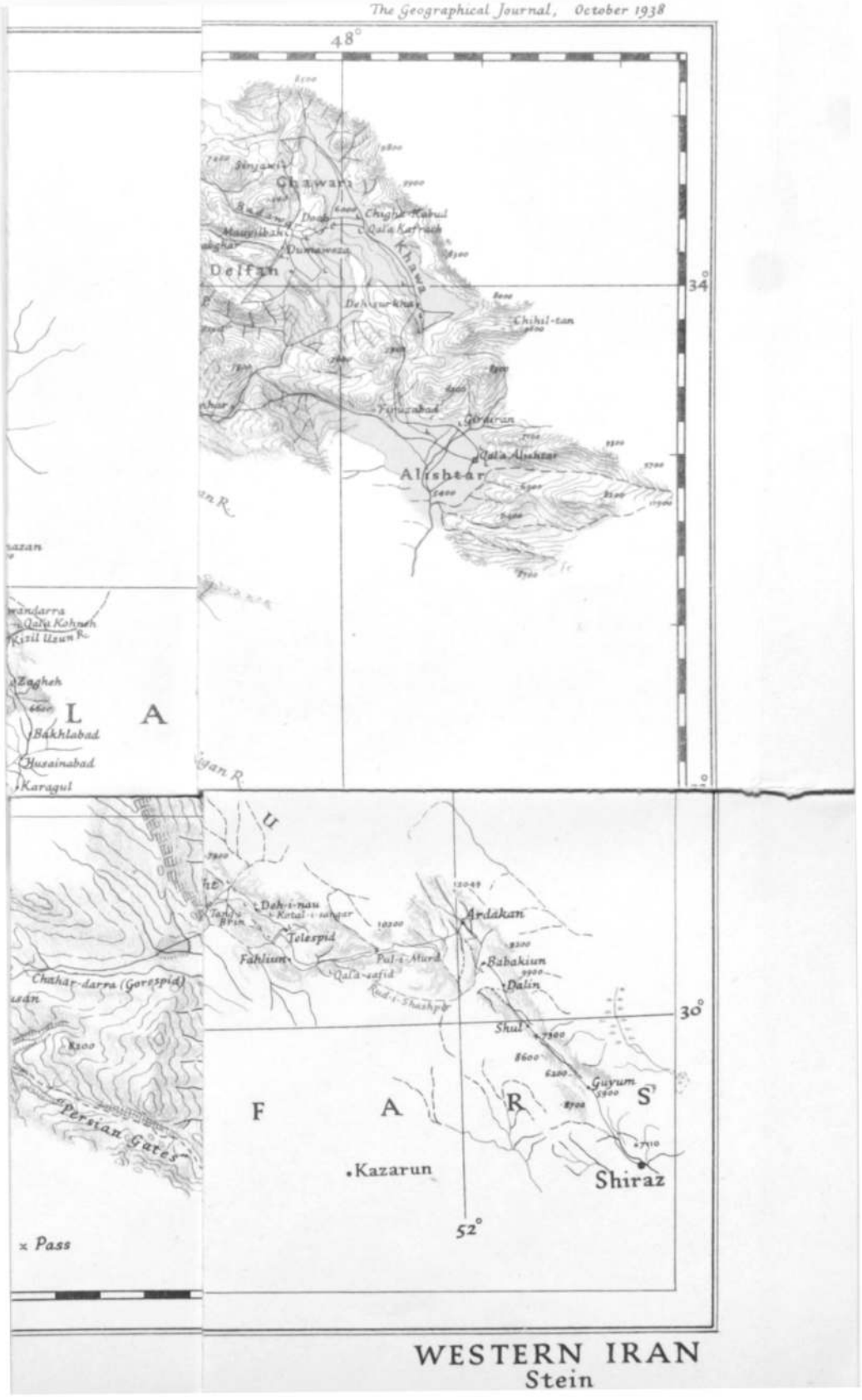


WESTERN IRAN
Stein

LURISTAN

Map of parts of
PISH-I-KOH and DELFAN

PARTS OF THE
WESTERN PROVINCES OF IRAN

From surveys made in 1935-36 under the direction and with the assistance of Sir Aurel Stein, K.C.I.E. by Surveyor Muhammad Ayub Khan, with additions from the maps of the Survey of India

Scale 1:750,000
Miles 5 0 5 10 15 20
Kilometres 10 0 10 20 30 40
Cultivation ∴ graves × Pass

Scale 1:2,000,000
Miles 25 0 25 50
Kilometres 25 0 25 50 75 100
Route —— Ancient site · Ancient bridge =
Heights in feet : Trigonometrical 8204 ... Approximate 9300
Rivers which generally contain water are shown blue

LAKE URUMIA
SOLDUZ
LAHIJAN
ARDALAN
KERMANSHAH
PISH-I-KOH
PUSHT-KOH
LÚRISTAN
BAKHTIARI
DELFAN
ALISHTAR
RUMISHKAN
KHURRAMABAD
DIZFUL
SENNEH
SANANDAJ
SAUJBULAGH
SAKIZ
SARDASHT
PASWAH
MIANDUAB
SAIN KALEH
BUKAN
SERA
SARAB
KARAFTO
KARAFTO CAVES
KARANCU
SIR
KASNAZAN
DEWANDARRE
QALY KOHNEH
DARAGARAN P.
ZAGHEH
BAKHLABAD
HUSAINABAD
KARAGUL
GARDANEH KASRAU KUH
ASKARAN
SANGHUR
KAMYARAN
KASSARVAND
SAHNEH
GAHVAREH
KERMANSHAH
KARIND
MAHIDASHT
HARSIN
HARUNABAD
HULAILAN
MURAKUN
SARGIZ P.
KUSHNAHUR
KAH-I-DASHT
BAWA GIRD-ALI
SAIMARREH R.
KASHGAN R.
MADIAN R.
KOH-I-DASHT
KOH-I-KIALAN
CHIN-I-ZAL
PUL-I-ZANG
QAL'A-I-REZA
KARKHEH R.
AB-I-DIZ
SALIHABAD
PA-I-PUL
PUL-I-DUKHTAR
JAIDAR
AB-I-FANNI
SAMAQ
KOH-I-DASHT
TAZEWAR
SARAW-KALAN
AB-I-CHANAREH
MALEK-DAR P.
CHIGHA
ZAKHEH
KHAWA
GIRAIRAN
CHIHIL-TAN
DAN-I-NAU
TELYAB
QAZWAN
DEHGURKHA
SARHANKHI
AYLANDAR
KHAWA
GIRAIRAN
QAL'A ALISHTAR
KUSHKAN R.
SAIMAREH R.
CHIGHA-PAHAN
CHIGHA-WIZHEH
CAUCASIA
RUSSIAN TURKISTAN
Caspian Sea
Baku
Tiflis
Tabriz
Tehran
Damavend
Hamadan
Kangavar
Baghdad
Isfahan
Ahwaz
IRAN (PERSIA)
TURKEY
AFGHANISTAN

PARTS OF THE WESTERN PROVINCES OF IRAN

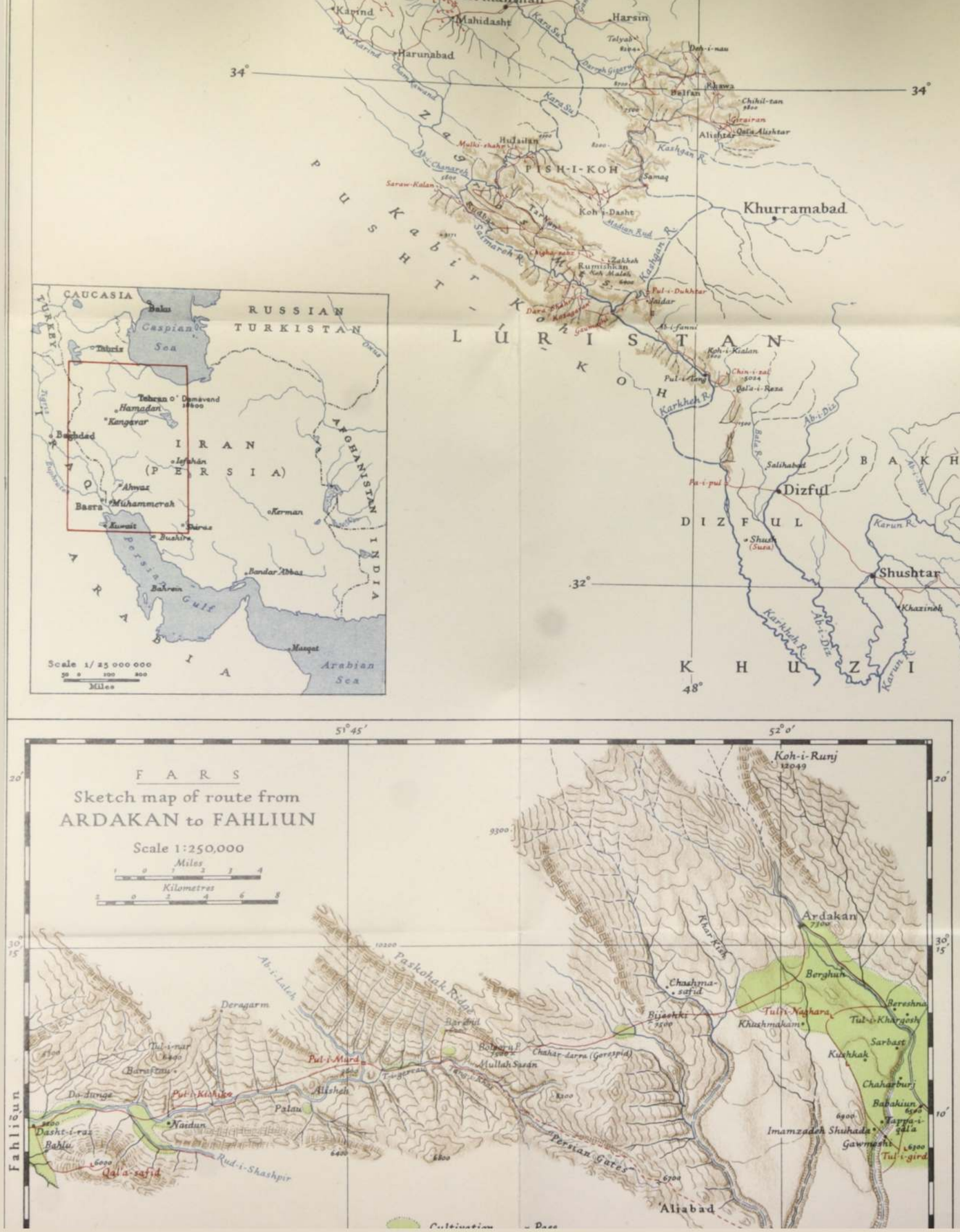
From surveys made in 1935-36 under the direction and with the assistance of Sir Aurel Stein, K.C.I.E. by Surveyor Muhammad Ayub Khan, with additions from the maps of the Survey of India

Scale 1 : 2,000,000

Miles 25 0 25 50

Kilometres 25 0 25 50 75 100

Route —— Ancient site ◦ Ancient bridge =
Heights in feet : Trigonometrical 8204 ... Approximate 9300
Rivers which generally contain water are shown blue



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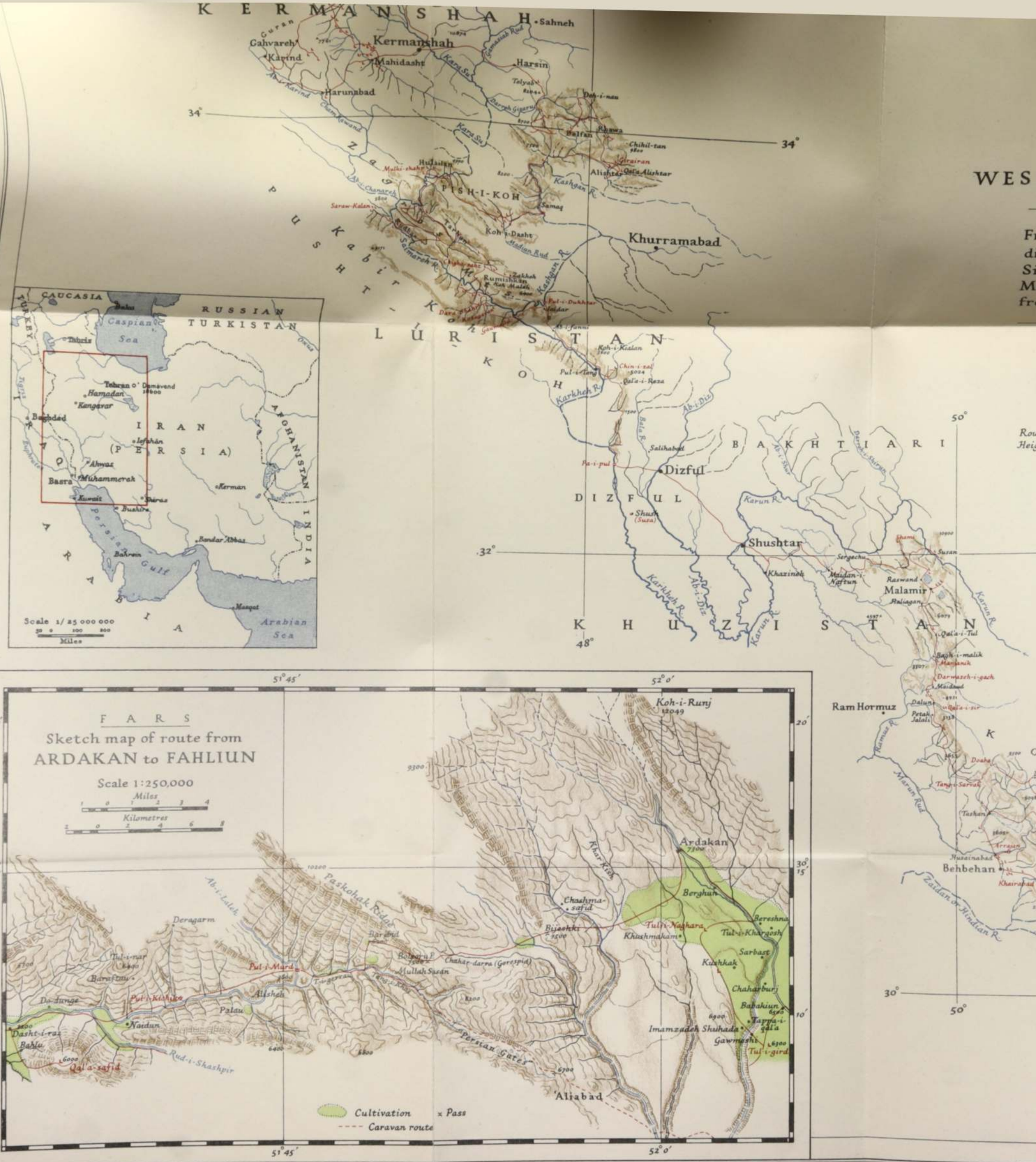

FARS

Sketch map of route from
ARDAKAN to FAHLIUN

Scale 1:250,000

Miles 1 0 1 2 3 4

Kilometres 2 0 2 4 6 8

C.E. Denny, del.

Published by the Royal Geographical Society

WESTERN IRAN
Stein